

FORESTS

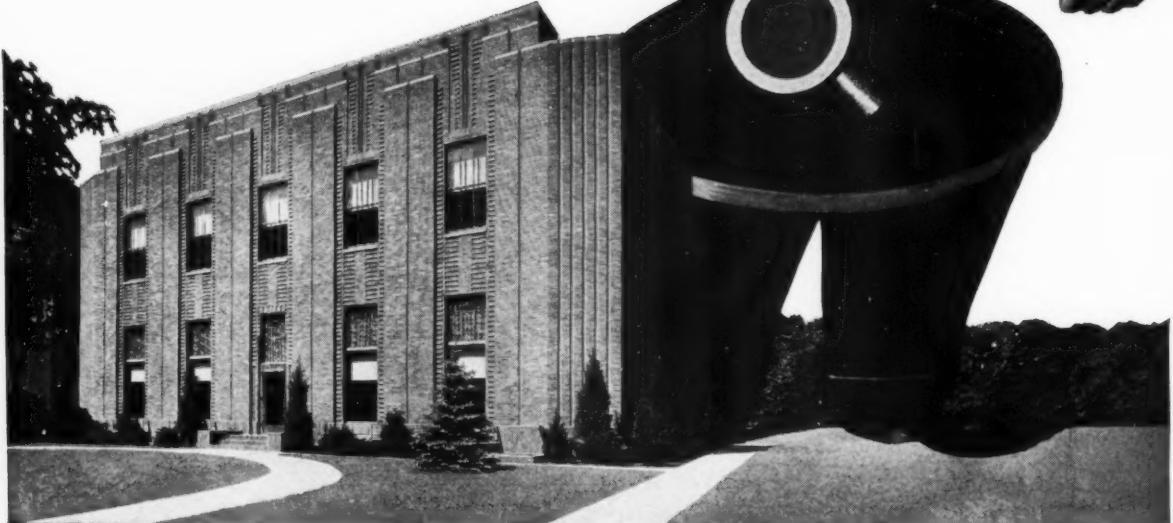


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AMERICAN FORESTS

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THE COVER

Ranger in Sequoia National Forest, California
Photo by Norman L. Norris, U. S. Forest Service

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The American Forestry Association is a national organization—educational in character—for the advancement of the intelligent management and use of the country's forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is (1) to bring about adequate protection and perpetuation of these resources by creating an enlightened public appreciation of the need of conserving them through wise use for the present and future welfare and enjoyment of all the people; (2) to make available to Americans in all walks of life a wider knowledge and appreciation of their forest resources and the part they can play in the social and industrial life of our nation.

The History MORE THAN half a century ago American men and women of vision, stirred by the rapid destruction of forests and forest life in the United States, began to raise their voices in behalf of conservation. Foreseeing the danger of allowing America's rich forests and vast natural wealth to be thoughtlessly wasted, these public-spirited individuals protested the needless destruction that was taking place. Out of their efforts came a collective force — The American Forestry Association, first organized in 1875 and made a national influence in 1882.

The Record THUS The American Forestry Association has a long record of efficient public service. The establishment of the United States Forest Service and the creation of the nation-wide system of state and national forests and parks were due in no small part to the Association's efforts. Its educational work, extending over more than seventy years, has stimulated public action and built public support for protection against forest fires and floods; for prevention and control of soil erosion; for the development of conservation policies in forest management for continuous production through wise use; for the control of forest insects and diseases and the preservation of fish and wildlife.

The Support FROM AN ORGANIZATION of a few hundred members three decades ago, the Association has attained a substantial membership of many thousand men and women, living in every state in the Union and in foreign countries throughout the world. The funds of the Association are administered by a Board of Directors composed of individuals of national standing—men and women who give their services free, who have a practical understanding of the nation's present-day conservation needs, and are equipped through experience, ability, enthusiasm and training to advance the Association's program.

The Program BECAUSE OF its independent, non-political character, the work of The American Forestry Association is vitally necessary in the field of public service. It provides an unprejudiced influence for the development of sound conservation measures. It helps coordinate public, state and federal policies. It cooperates closely with federal, state and private agencies in conservation work. At the same time it initiates, sponsors and carries on needed projects in conservation in addition to its regular broad continuous program of education.

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LUMBER in one of its daintiest forms is a product of the Diamond Match Co. Yet some of the toughest power equipment plays vital parts in its production: "Caterpillar" Diesel Tractors and Motor Graders in the woods,* and "Caterpillar" Diesel Electric Sets in camp.†

As in practically every purchase, the Number One reason for the choice of "Caterpillar" Diesels was their outstanding ruggedness, quality and dependability... for their generous surplus of "what it takes."

Another important reason is that "Caterpillar" equipment is serviced by the most efficient, most widely available dealer organization of its kind in the world.

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*In the woods (Butte Meadows, California), the Diamond Match Co. uses 11 "Caterpillar" Diesel Tractors and 2 "Caterpillar" Diesel Motor Graders.



†In the camp, 2 "Caterpillar" Diesel Electric Sets provide light and power for 67 cabins, an 80-man cookhouse, an office, a filing house, 4 warehouses, 2 shops. Older set has already run 47,000 hours—with a total repair expense of only \$200.

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Keeping America Green

**A BIG JOB THAT ALL OF
US CAN ACCOMPLISH...**

THE BUSINESS of Keeping America Green is a job so very simple we Americans have been making hard work of it.

It's so easy that we Americans have been overlooking it to the tune of some \$40,000,000 a year in direct money losses—sometimes more than \$100,000,000 in a single year.

The job of protecting our growing forests from searing flames is as simple as this:

... Bill Jones, one hand on his car's wheel, forgets his ash tray and tosses his cigarette out the window.
... the Tom Green family cleans up the paper napkins, plates and tin cans—as all good picnickers should—but goes away leaving campfire smoldering.
... Farmer Brown burns his brush pile too close to the woods. Now he has neither brush nor woods.
... and, sometimes, even a logger knocks the glowing embers out of his pipe and succeeds in wiping out his job along with a lot of timber.

There you have fair examples of the cause of half our forest fires . . . just simple carelessness a

moment's thought could have easily prevented.

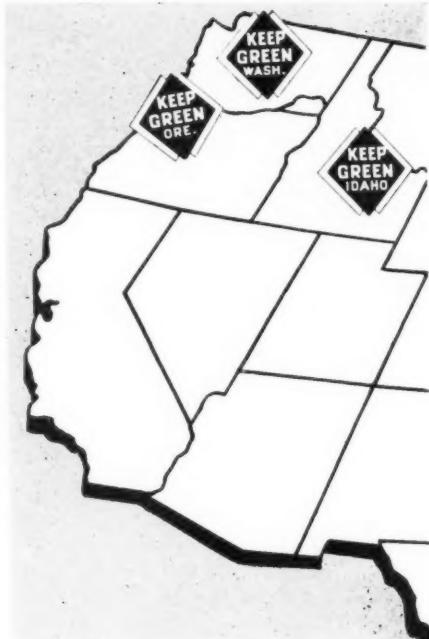
Another 25 per cent of our forest fires is blamed on incendiaries, folks who set them deliberately. Don't call them arsonists, because most of them aren't. They think they are starting fires for a good purpose, perhaps to "green up" pasture grasses.

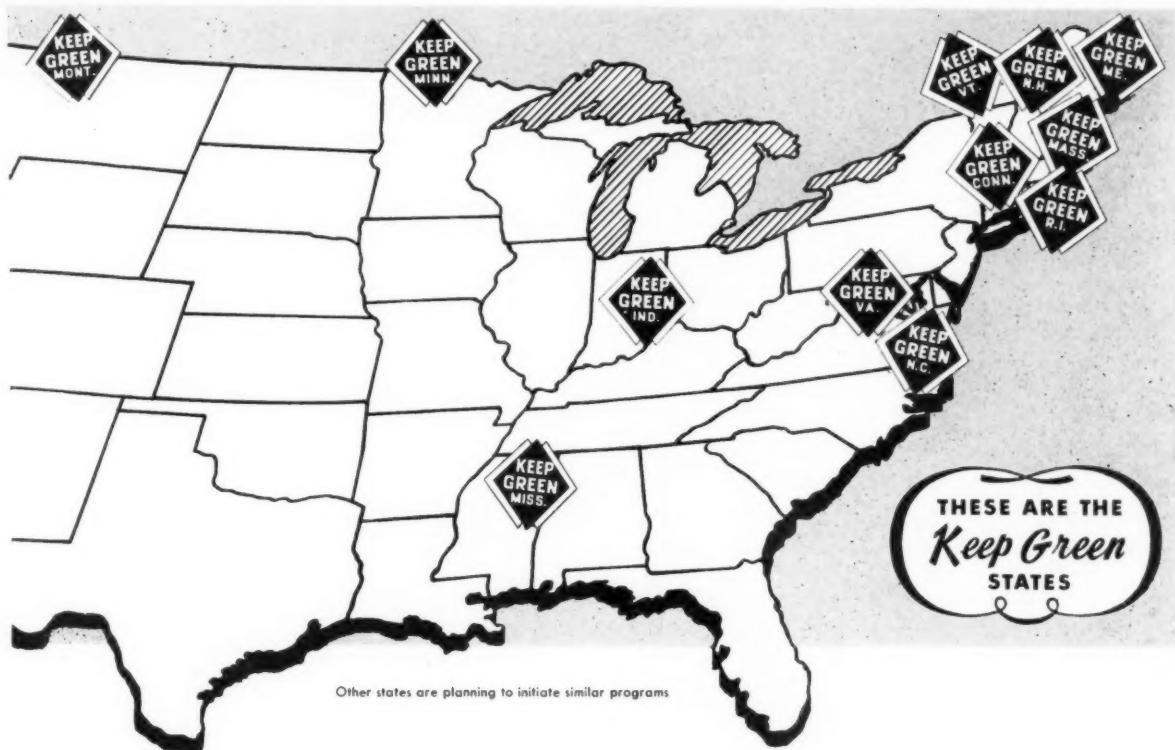
These good citizens lack only one simple thing—an understanding of the greater values in their woodlands, for them and for their country.

Of such stuff the American forest fire problem is made. It's an immense aggregation of many little things, which, added together, make the job of fire prevention actually a huge one.

It's the job of convincing every individual that he, himself, is a personal guardian of our forest future, of his forest future. Because every individual is capable of starting a forest fire, every individual is capable of preventing one.

The organized **KEEP GREEN** movement has spread to 15 states in only a handful of years. It gives nearly everybody something to do about





forest fires. The gist of its philosophy is that forest fires are a problem personal to each of us, not something for the other fellow to worry about.

It gets everybody at work. It enlists the active participation of sportsmen and school children, of chambers of commerce and labor unions, of veterans and women's clubs, of business and service clubs, of teachers and farmers.

All these people learn that our forests are producing wood on round-the-clock shifts. They know they produce more than wood. They produce jobs, and taxes for better schools, and good roads. They provide recreation as well as payrolls. They keep towns prosperous and they put money in the pockets of farmers.

Knowing their personal stake in forests, these KEEP GREEN sentinels are always on guard . . . to prevent fires from starting . . . to keep their own states, and America, green.

• **EVERY FORESTED STATE** needs a KEEP GREEN movement.

The 15 states designated on this map already have organized KEEP GREEN committees. Through them, industry, the public and the government work hand in hand to solve this common problem.

They are getting results.

If you are interested in what KEEP GREEN can accomplish in your own state, we suggest you write the American Forest Products Industries, Inc., 1319 18th Street N. W., Washington 6, D.C. They can tell you how such a program is organized, and explain how it works. They will help you gladly, because that's their business . . . to help keep trees growing for America.

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ANNOUNCEMENT

On June 18, just as this issue of AMERICAN FORESTS was going to press, The American Forestry Association announced the membership of the Forest Program Committee appointed to outline a forest program to be submitted to the American Forest Congress which the Association has called in Washington, D. C., October 9, 10 and 11.

This committee will meet at Higgins Lake, Michigan, July 14 to 17, to analyze forest conditions currently prevailing throughout the country and to formulate a program designed to meet the nation's postwar forest needs. As a guiding basis for its program drafting, the committee will have available the results of the Association's Forest Resource Appraisal which will have completed by July 1, a three-year inventory of the country's forest resources.

The Program Committee will number 20 members drawn from the major fields of American life directly concerned with the growing of trees and the maintenance of productive forests on America's 625,000,000 acres of forest lands. The membership of the committee is as follows, lacking one member not yet confirmed who has been selected to bring to the committee a broad knowledge of the relationship of forests to the nation's rail transportation system:

Federal Government

Department of Agriculture

Ray E. Marsh, Assistant Chief, U. S. Forest Service

R. E. McArdle, Assistant Chief, State and Private Forestry, U. S. Forest Service

Department of the Interior

Lee Muck, Assistant to the Secretary, In Charge of Land Utilization

A. Z. Nelson, Chief, Forestry Division, General Land Office

Bureau of the Budget

James E. Scott, Assistant Chief, Division of Estimates

States

George O. White, State Forester of Missouri, Missouri Conservation Commission

Stanley G. Fontanna, Deputy Director, Michigan Department of Conservation

Hubert R. Gallagher, Associate Director, The Council of State Governments

Forest Industry

Julian F. McGowin, W. T. Smith Lumber Company, Chapman, Alabama

Corydon Wagner, St. Paul & Tacoma Lumber Company, Tacoma, Washington

S. R. Black, Vice President, Weyerhaeuser Sales Company, St. Paul, Minnesota

Charles H. Sage, Kimberly-Clark Corporation, Neenah, Wisconsin

Lloyd E. Partain, Manager, Commercial Research Division, Curtis Publishing Company, Philadelphia, Pennsylvania

Woods Labor

Karly Larsen, First Vice President, International Woodworkers of America, Seattle, Washington

Profession of Forestry

George A. Garrett, Dean, School of Forestry, Yale University, New Haven, Connecticut

Forests and Water

Judge Clifford H. Stone, Director, Colorado Water Conservation Board, Denver, Colorado

Forest Recreation

Tom Wallace, Editor, *The Louisville Times*, Louisville, Kentucky

Wildlife

J. N. (Ding) Darling, Former President, General Wildlife Federation, Des Moines, Iowa

Farm Woodlands

P. O. Davis, Director of State Extension Service, Auburn, Alabama

Meeting with the committee in an informational capacity will be John B. Woods, Director of the Forest Resource Appraisal, and the members of his Advisory Council who have served throughout the course of the project. These are William B. Greeley of Seattle, Washington; Samuel T. Dana of Ann Arbor, Michigan; James W. Girard of Portland, Oregon; William G. Howard of Albany, New York, and E. O. Siecke of College Station, Texas.

Upon completion of its work the Program Committee's proposed program will be made available for public comment and for the advance information of all those who plan to attend and participate in the October Forest Congress.

Editorial

WAR VETERANS AND CONSERVATION

WAR veterans form the most important group in America today. National leaders are keenly aware of this and what the ex-GI thinks, says, or does is of first importance to them. The reasons are obvious. Their number approaches 12 million, they are becoming well organized and, what is more significant, from their ranks will rise our leaders of tomorrow.

Thus it is time we appraise, if only on preliminary judgments, the veterans' attitude toward national resource conservation, particularly in respect to our forests. Have they, as some assume, been so thoroughly schooled in war's excesses and quick destruction as to be incapable of dealing in long-range values? Or have they been shocked by catastrophic devastation into a more realistic evaluation of life's dependence upon the producing lands of the world and the treatment they receive in the hands of succeeding generations of mankind?

While only time will write the final answer, there is at hand a clue to what this will be. Interviews with returning veterans indicate strongly that the average GI not only has been exposed to an unforgettable lesson in conservation, he has lived through one. He should know, if anyone should know, that security and freedom lie not alone in valor and fortitude, no matter how great, but in the capacity of his native soil to produce continuously and abundantly the raw materials that spell strength and unity.

The story of the part American forests played in the winning of the war need not be re-told for the GI. He lived it from boot camp to jungle hospital, from Guadalcanal to Berlin. On the high seas, on the beachheads, on every far-flung front the familiar woods of his own forests were with him, packaging his ammunition, his weapons, his food, his medical supplies. He knew then, in

stark reality, the value of producing forests; he is not likely to forget it now.

Nor is he likely to forget what he saw in England where he waited long months for the invasion—a desperate nation reduced, because of wood deficiencies, to harvesting its shade trees, to salvaging the last splinter of its bombed-out dwellings. And in France, Germany and other countries on the continent, he was impressed by hungry and homeless people harvesting the fruits of centuries of forest culture, but still protecting their resource to the extent consistent with human preservation.

In the Mediterranean where he baked under merciless sun in areas devoid of vegetation, the connection between meager resources and meager civilizations was too plainly written to escape him. Similarly, in China he viewed at first hand the results of forest depletion—a crowded, resourceless land of famine and floods. In Japan, on the other hand, he saw how the husbanding of forests contributed to agriculture and general economy to an extent sufficient to raise that country to a threatening military power.

This, briefly, is the returning GI's own appraisal of his lesson in conservation. Coming from relatively few veterans it is not conclusive, of course, but it is a clue—and a good one. Significantly, this self-appraisal varied but little among the men interviewed, regardless of rank or service.

If we accept this, and we should in lieu of evidence to the contrary, our course is clear. The call of new and young blood to responsibility will vitalize resource conservation in this country at a time when it is urgently needed. Veterans, individually and collectively, can and will provide this stimulus if we enlist their support and provide in our programs the degree of realism and action they will demand.

For it is safe to predict that they will be impatient with any process that inches along—with the perfectionist who withholds action for a final touch—with those in government and industry who are satisfied with hopes and plans. They have just returned from a situation which developed because of hopes and long planning, but which had to be solved by rugged and determined action. They have learned in a hard school that victory is won by moving forward, not by digging in and holding.

It is also safe to assume they will have little patience with those who load down programs with reforms and causes which, however meritorious, tend to detract from the first and important task of devising means to repair and restore our forest and other resource war losses while meeting housing and other currently critical needs of the people, particularly of the veterans themselves.

Only if we recognize this realistic attitude can we bring these young men of action with their fresh viewpoints, their mental and physical vigor, to the line for conservation. And, certainly, it is difficult to visualize any national or regional program to rebuild our forest resources and stabilize or improve forest industries succeeding without them.

Members of the Program Committee of the American Forest Congress will face this challenge for action when they meet at Higgins Lake, Michigan, in mid-July to draft a forest program for the nation. In simple and clear-cut language, their problem—and it is one of the most vital confronting the country today—is to keep trees growing on American woodlands. How the committee meets this problem in terms of a realistic, go-forward program, and how—in October—it is dealt with by the Congress itself, will determine the measure of veteran support and enthusiasm it will receive.

A geological wonderland, an arid wilderness of rare forms of plant and animal life, a land steeped in colorful border history—this is our newest national park, the Rio Grande's



Visitor cabin at foot of Casa Grande, on the northern end of the Chisos

NEWEST of American national parks is the Big Bend in Texas. To locate the area, take a map of the United States, trace the Rio Grande from its source in New Mexico southeasterly along the boundary between Texas and Mexico, and follow it to the point where it makes a conspicuous turn to the northeast. This is the Big Bend of the Rio Grande.

In the angle formed by the river at this point lie a couple of million acres of as rough and rugged a country as one can find in many days of travel. A part of this, around 690,000 acres, has been set aside to form the Big Bend National Park. In this move there has been widespread popular interest, especially in Texas. Wilderness lovers and outdoor enthusiasts all over the country rejoice that this huge tract has been reserved for all time for recreational, economic, scientific and observational purposes.

Why the Big Bend National Park? It is true that it lacks the mighty caverns of Carlsbad, nor does it possess an unbelievable eroded gorge like the Grand Canyon; it has none of the polished rock cliffs and canyons characteristic of Yosemite, no huge glaciated peak like Rainier.

But like a charming Spanish señorita, the Big Bend combines elements

of sturdy strength with a southern charm which make it unusually attractive.

The region long has been known as a geological wonderland, a wilderness of rocks, a place of inaccessible canyons—Santa Elena, Mariscal and Boquillas. Its horizontal strata are formed by the extensive Edwards limestone, which rise into tremendous escarpments on both the northeast and southwest portions of the park. In the vast territory between the Deadhorse Range (now called Sierra del Carmen on park maps) and the Mesa de Anguila (north and northwest of Santa Elena Canyon), there has been some sort of slump in the rock formation and the horizontal limestone layers have dropped several thousand feet.

Forced through the limestone at a number of places are formations of igneous rocks. These form not only the main portions of the Chisos Mountains, but a number of minor outlying irregular mountain masses, such as Chilicotal, Talley Mountain and Lone Peak. The resulting apparent confusion of rock formation with all the associated modifications resulting from erosion, both of wind and water, afford a never-ending fascinating puzzle in the solution of which one with a geological turn of mind takes special delight.

BIG BEND

By WALTER P. TAYLOR

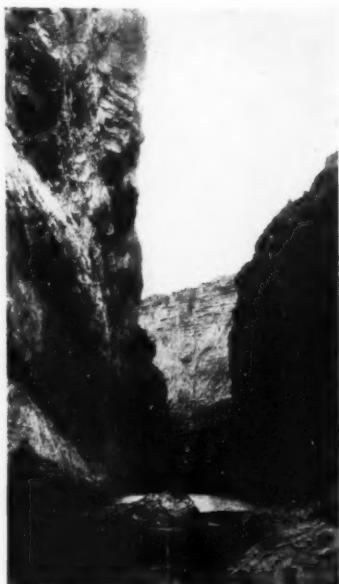
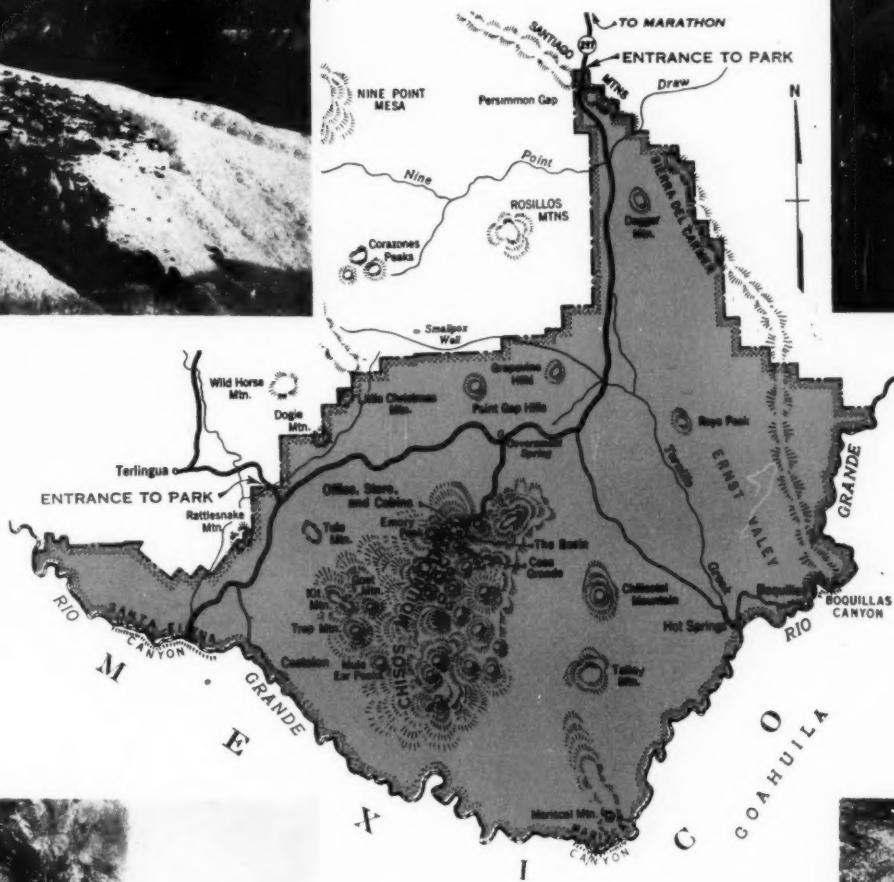
Key to the entire region is the Rio Grande, or Rio Bravo, as some of the old maps have it. For all one can gather from these maps, an explorer could start at the mouth of the river, which is one of the longest on the continent, and gradually work his way into the heart of North America. But alas for the early pioneers who tried it! Doubtless we modern travelers can gain but a faint idea of the obstacles they encountered, distance from their base of supplies, fearful canyons, rocky cliffs, high-walled tributaries, insurmountable ridges, not to speak of the climatic difficulties, winds, droughts, cloud-bursts and burning heat coming not only direct from the sun but also from rocky side-walls and from the water surface of the river.

It is well known that Anglo-Saxons have been working the general region at intervals since the days of Cabeza de Vaca in the 1500's. Indians, chiefly Apaches and Comanches, followed regular trails through the more negotiable portions of the area. The Spanish had a substantial part in the early exploration, and at a later time the Mexicans—now the federals and now the revolutionaries—would alternately cross into the United States and return to Mexico.

Time marched on, and these earli-



On a clear day one can look down from the south rim of the Chisos Mountains (right) on 100 miles of mountainous desert. Castleone Peak (left) is Chisos landmark. Note white clay in foreground



Here is the Big Bend of the Rio Grande—several million acres of rough and rugged country bordering on Old Mexico, nearly 700 thousand acres of which form the nation's newest national park (indicated in color on the map above). Long known as a geological wonderland, a wilderness of rocks, a place of inaccessible canyons, it is also of outstanding interest because of its rare plant and animal life. Rio's Santa Elena Canyon, traversable only by boat, is shown at left—dramatic Mariscal Canyon at right





Far removed from fearful canyons and rocky cliffs is this stretch of the Rio Grande in the vicinity of Lower Hot Springs. Beyond its placid waters is Old Mexico

er pioneers gave way to those Big Bend businessmen who engaged in mining at Terlingua or in Mexico across the Rio Grande from Boquillas, Texas, transporting the ore across the great river on an unbelievable cable, long since fallen into disuse, then hauling it to Marathon by way of the Old Ore Road. Or to those who established long forgotten candelilla factories for the manufacture of wax at Stillwell Crossing of Noria, north of Boquillas on Tornillo Creek, or at the nameless community near the Martin's Ranch of recent times.

In more modern days came the American stockmen, a sturdy breed whose living was wrested from an environment which the pampered son of the city would reject as utterly impossible.

At first a single great cow outfit is reported to have pastured more than a million acres in this region, grazing the animals on the productive plains about Marathon in the summer, ranging south to the Rio Grande in winter. Those were the days when antelope ranged over Tornillo and Tobosa flats, and when the rocky limestone of the Deadhorse and Mariscal mountains and the Mesa de Anguila afforded home, food and shelter for the Texas bighorn.

As the ranges became overgrazed, smaller outfits came in, not only with

cattle and horses, but also sheep and especially goats. Each class of livestock had its preferences among the plants. The horse tribe was partial to chino grass; the sheep worked on the weeds; the cows ate the gramas; the goats were not very particular, while they passed up the needle grass, they took practically everything else, and specialized on several varieties of browse. The deer—for there were always deer—used nearly all classes of vegetation, grass, weeds and browse to a varying degree.

Some plants were well liked by all classes of livestock and by deer, too, and quite naturally these were the first to be eaten out. The results can be readily imagined. The chino grass, formerly so abundant it was cut for hay to feed the work teams hauling the ore from Boquillas to Marathon, was eliminated over vast areas. The tall grasses of the foothill types were so reduced one had to search to be sure they were there at all. The tobos grass was cleaned out of Tornillo and Tobosa flats.

But the Texan is a proud citizen—he likes being an American, but is enthusiastic about being a Texan. The Big Bend has a unique flavor of Texas and when first the Big Bend State Park and later the national park were proposed, the citizens of the former republic rose to the occasion. Generous private funds were solicited

and paid in. An appropriation of \$1,500,000 was made by the Texas legislature, and before many days had gone by, the beginnings of the great park project were solidly laid. The trend toward despoliation was halted and reversed, and nature's healing process could begin.

Really, Texans ought to celebrate June 12, 1944—the date of the creation of the Big Bend National Park—as a state holiday.

In this great southwestern area the keen-eyed and alert-minded visitor, the traveler who is awake, as Thoreau might observe, sees far more than the great river, the mountains and the arid wastes. He sees here the end results of the long and complicated epic of a continent, in terms of fascinating forms of plant and animal life as well as in the rock structure.

Almost any one of the 1,000 or more species of plants in the park is of signal and special interest if we only have eyes to see and minds alert enough to take them in. Among them the following are outstanding: the Arizona cypress, the drooping juniper, occurring nowhere in the United States except in the Chisos Mountains; the tobos grass, formerly marking the range of the antelope; hechtia, peculiar to the Chisos Mountains, with fleshy leaves, thorns and tall stalk, reminding one of a

(Turn to page 343)

Stock Farm in the woods

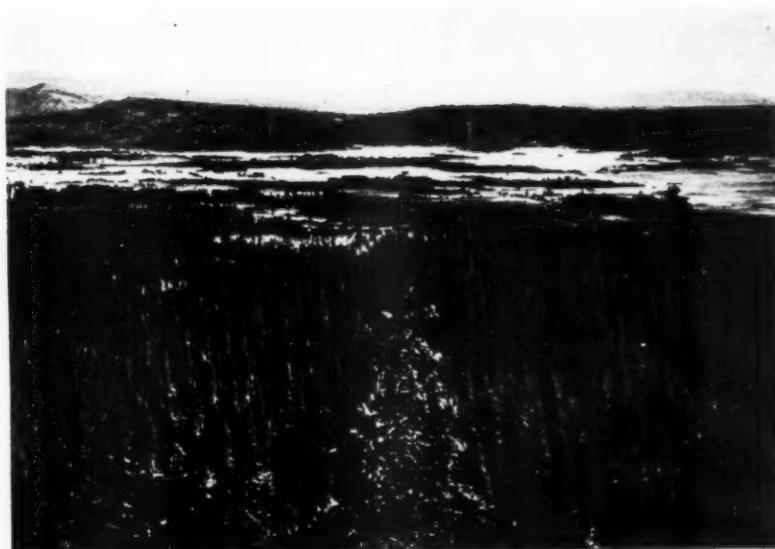
By ALBERT ARNST

In the ponderosa pine country of Washington foresters, ranchers and lumbermen join forces to prove that livestock and seedlings can thrive on the same acres

CATTLE, sheep and trees for tomorrow are being fattened today on rolling ponderosa pine lands in Klickitat County, Washington. Through a far-sighted grazing program cooperatively devised by the J. Neils Lumber Company, local grazing permittees, the Underwood Soil Conservation District and the College of Forestry of the University of Washington, livestock and seedlings are thriving on the same acres.

Twenty miles north of the broad Columbia River, by twisting road up the narrow Klickitat Valley, is the J. Neils millsite, consisting of a modern and efficient sawmill, planing mill, dry kiln and box factory. The county's most important wood conversion plant harvests its logs from local forests and normally employs 400 mill and woodworkers, who sustain the town of Klickitat. With a daily logging capacity of 140 thousand board feet and an annual mill capacity of 30 million board feet, J. Neils uses power skidders and tractors in logging, has its private railroad from woods to mill, and is a leader in sustained-yield forest management in the Pacific Northwest.

Klickitat County's million-odd acres are 46 percent forested; grain crops and livestock are important agricultural products. Livestock utilizes spring and summer forest range after open, drier areas have been grazed.



On rolling pine lands of the J. Neils Company, livestock and timber are products of a permanent forest economy, based on wise use



Cattle graze in one of the meadow openings found in Klickitat County, adding up to 100 pounds an animal because of managed range



The planting area, at right, protected by a fence, supports a fine growth of pines and grasses, while uncontrolled grazing has scoured out the ground cover at left

At least 4,500 people depend on a forestry and grazing economy, and part-time ranchers frequently work in nearby logging camps.

Klickitat County needs permanent forest industries and J. Neils needs permanent forests.

West of the Klickitat River and north of the town of Klickitat lies the plateau block, a gently rolling table-land unit of 67,000 acres in which Neils has acquired approximately 30,000 acres. In 1938, selective logging operations were to be transferred from the plateau block north to the Glenwood block, rated by many foresters as the best producing pine land in Washington. With blocked-in state and federal ownerships, timber was available there for a sustained-yield cut of 30 years or more, before a return to the plateau block for another log crop.

Since 1936 the College of Forestry at the University of Washington had

been sending its senior class in forest management out to the pine domain of the Neils Company. Here foresters worked out practical solutions to problems in sustained-yield management of timber and range. Their conclusions are summarized in reports covering timber cruises, fuel type mapping, slash disposal studies, timber condition analyses, cutover land examinations and grazing reconnaissances.

Many of the recommendations have been adopted by J. Neils and comprise a substantial part of today's sustained-yield operations on some 55,000 acres of company land. In formulating this program, the company received the active support of state and federal forestry agencies whose intermingled ownerships were needed to block out management units. University of Washington forestry graduates helped develop the management plan.

In early 1938, the College of Forestry made a grazing reconnaissance covering most of the plateau block. The report highlighted an earlier recommendation — that the 30,000 acres of cutover company land be retained for timber production—and stressed the importance of the leased forage resource in meeting annual fire protection and tax costs. It also painted a more serious picture—under prevailing grazing practices the range resource was being dissipated, tree reproduction was being trampled or browsed and erosion scars were appearing. Not only timber but also forage should be cropped on a sustained-yield plan.

In late 1938, Soil Conservation Service men became interested in the company's land use problems. Preliminary inspections of the plateau block indicated possibilities for range management demonstrations and in early 1939, SCS grazing men com-

pleted a detailed survey of 67,000 acres in the plateau block, including the J. Neils and other ownerships.

The findings, in agreement with the College's 1938 report, singled out many mismanagement conditions. The range depletion indictment included these charges: earlier clear-cut logging and broadcast burning of slash; concentration of livestock in meadows; lack of spring developments and proper salting plans, resulting in improper stock distribution; overgrazing through trespass because of lack of fences and other forms of control; farming and abandonment of small areas; overgrazing through a leasing system based on a flat rate per acre without control as to the number of stock per acre; bedding of sheep more than one night in one place; close herding of sheep and salting near water.

Neils' range had been exploited with that of the rest of the Klickitat valley. Perennial grasses, high as a horse's belly, once grew in the early seventies and eighties. By 1910, excessive stocking had greatly deteriorated the range, but 200 thousand sheep still ran the range in the Mt. Adams country, where today only 50,000 head can be summered. Overgrazing had reduced the county's forage crop to brush, annual grasses, weeds and unpalatable species, and had created localized erosion wounds. Broadcast slash burning had injured forage and advance reproduction and retarded ecological successions.

Grazing "open range," by any number of stock and without seasonal or other controls, was local custom. Because there was no state herd law, stockmen ethically could run livestock on unfenced property. "Unwritten" law frowned on fencing of private property; landowners doing so were plagued with mysterious windfalls and broken fences. Lessees were not protected from trespass by adjacent lessees' livestock and many areas were grazed by both sheep and cattle three or four times a season. Sheep men turning out in May might find that cattle already had utilized the range. Cattlemen generally leased a small waterhole tract and grazed the surrounding country from this "home" unit. Ordinarily grazing started in March before the beginning of spring growth, and severe trampling and pulling out of forage plants occurred. Control of trespass stock was difficult because of the extreme intermingling of ownerships, many of them absentee.

Range depletion was accelerated by the flat rate system of leasing, with-

out limitations on numbers of stock or seasons. Premature grazing was common. Stock was handled poorly and water holes became scour spots through improper salting. Cattle, allowed to run at will, overgrazed meadows and open spots. Sheep bed grounds were used several nights in succession, with resultant trampling and overgrazing. Although plentiful, water supplies were poorly developed and did not produce at full capacity.

These mismanagement practices had depleted 85 percent of the range's vegetative types, with another 12 percent in still poorer condition. Carrying capacity averaged about 14 acres for a sheep season or 70 acres a cow season. The browse-shrub type comprised 19 percent of the range and coniferous timber 64 percent, the latter mostly an overstory of Douglas-fir remaining from the pine logging of previous years. Grassland, meadows and perennial weeds constituted minor range types and inaccessible canyon areas formed 15 percent of the survey types.

Strong medicine was prescribed to cure these range ailments: carrying capacity as a basis for stocking, with reductions to be made after conferences between company officials and stockmen. Conversion of the leasing system to a per head basis was recommended, with a rate adjustment producing approximately the same grazing revenue.

Other recommendations included setting of opening and closing dates; use of the range mostly for sheep; spring, summer and fall use, with special attention to be given in the spring to range readiness; better stock distribution through proper salting, fencing and water development; use of a range rider to patrol fences, count stock, check trespass, carry out salting plans and break up cattle concentrations; and the reseed-

ing of overgrazed meadows.

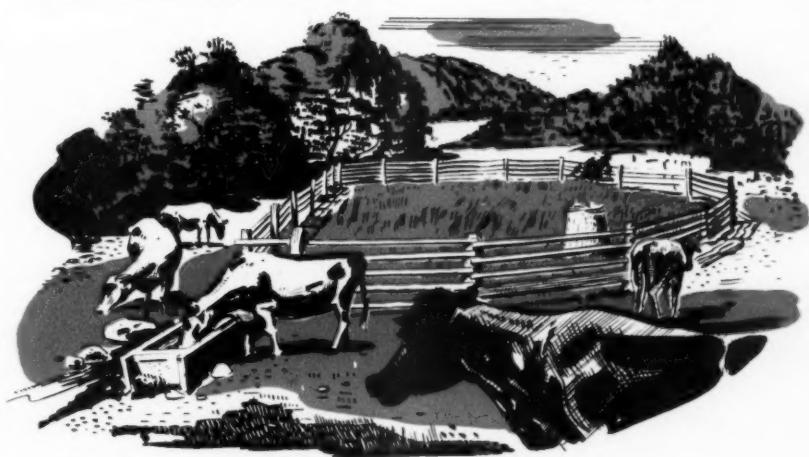
Company officials and SCS men explained the range improvement plan at meetings held with local permittees. Special emphasis was placed on the expected build-up in range carrying capacity. Permittees, realizing the dropping capacities of their leased ranges, became convinced that their ultimate welfare was in controlled grazing. And so, cooperative land use conservation plans were worked out between the J. Neils Company as landowner, the permittees as operators and the Department of Agriculture as technical agency.

Physical improvements listed in these plans included the prospecting, developing and installation of troughs or catchment basins for about 16 spring sources. Forty-three miles of drift and range fence were to be constructed to prevent outside trespass. Cattleguards on county roads crossing the range allotments were specified to prevent allotment trespass. Several range enclosure plots were to be established as visual proving grounds of protected range recovery. Cattle corrals were to be built at designated locations by permittees.

The company and its permittees stood the cost of fence posts, fencing, cement water troughs, cattleguards and all other construction material. Some labor assistance in construction of the improvements was available from an established CCC camp working on erosion control demonstrations in the county. Technical supervision was given by company and SCS men.

The program involved the cash outlay of several thousand dollars. Revised grazing leases formulated to enforce the new grazing program gave permittees the privilege of reimbursing the company in semi-an-

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A magnificent tree, the cedar of Lebanon has wide-spreading horizontal branches. Its wood is famed for its color and durability

THERE are few subjects more intimately associated with the Bible and the Holy Land than the cedar of Lebanon. It is especially linked in our minds with the reign of King Solomon and the building of the Temple. But there is another reason for the universal regard for this tree. To my mind, and no doubt there are many who feel as I do, the cedar of Lebanon is one of the most beautiful trees in the world.

Because its pinkish red, fragrant wood and its aromatic gum were in such demand, the great trees that once covered the sides of the Lebanon range have almost vanished—only a few remain. According to one authoritative report, a single grove of perhaps 400 trees now stands in that historic land. In the long centuries from Solomon's time to the present there has been no policy of conservation, and how these few great and aged trees have survived is difficult to understand.

This Lebanon area is one of the most historic and sacred spots on earth. To the east of it lies the Arabian Desert and the city of Damascus. To the west lay in Bible times the kingdoms of Tyre and Sidon, later Phoenicia. Through its valleys ran the old caravan route from Greece and Asia Minor to Palestine and Egypt. It was on this route that Saint Paul was turned from a persecutor to

the great "Disciple of the Gentiles." Through the long ages this area was the frequent battleground between the Mohammedans and the Christians; and it was here that many of the battles of the Crusades took place, and many of their great castles and defenses were erected.

I have seen no record of the terrain in which these remaining trees grow; but it is undoubtedly difficult, or they would not have survived. But whatever the difficulties, Christendom should see that these remaining trees are preserved and turned into an international reservation or park. Every attempt to make Palestine accessible to world settlers has met with the opposition of the Arabs; but there would probably be no opposition to an international park for the cedar of Lebanon. There is no commission in the United Nations organization for creating sanctuaries of this sort—but why not? Such a movement should have the united support of Christians and Mohammedans alike. However, in the beginning, the area would probably have to be secured by some group or foundation and held until the UNO is ready.

As the world is now organized this range forms the boundary between the republics of Syria and Lebanon. An international park of this sort should have great appeal to all lovers of the Bible, of beauty and of history.

Can this great tree of Biblical times, once highly valued for its durable wood, be successfully grown in the USA?

CEDAR OF
FOR ME

And while the last remaining grove of this great and beautiful tree is being preserved, would it not be a good idea to establish a grove in this country? The latitude of the Lebanon range is the same as that of Los Angeles in California, and there is sufficient evidence that the cedar of Lebanon will grow well in this country. And, in addition, is any tree more appropriate for planting in church yards wherever it will grow throughout the land?

It is hard to say just what the range of the cedar would be in America. A number of trees have been started recently in the southern states, and there are nurseries handling the seeds. So far as my observation goes it seems to grow anywhere in France, from forty-two and a half to fifty and a half degrees north latitude.

The tree was introduced into England in the seventeenth century, and it is said to do well in all parts of the kingdom. There its range is from 50 to 59 degrees north latitude, but, of course, in both England and France the climate is greatly modified by the Gulf stream, and the range there will be no accurate index for us. The Lebanon range itself is located in latitude thirty-three and a half to thirty-four and a half. Thirty-four is the parallel that runs through the city of Los Angeles, the center of Oklahoma and along the southern boundaries of Tennessee and North Carolina. But in Lebanon the trees grow at an altitude of about 6,000 feet, where the climate would undoubtedly be considerably colder than it would be at a corresponding lati-

LEBANON IN AMERICA

By HENRY S. CURTIS



The oldest remaining cedars are found in this grove high in the Lebanon Mountains. Their age is estimated to be at least 1,500 years

tude in the United States. However, the cedars that have been planted in this country have come largely from the Taurus or Anti-Taurus range where they grow up to an altitude of 11,000 feet.

Professor Donald Wyman, horticulturist of the Arnold Arboretum at Harvard University, writes, "The cedars of Lebanon growing in the Arnold Arboretum are approximately 45 years old, 50 feet tall, and are from the Anti-Taurus range.

We recently planted a few of the trees in the Michigan University arboretum at Ann Arbor. No one can be sure of their range in America without experimentation, but it would seem likely that it might include nearly all of the United States.

My acquaintance with the cedar of Lebanon began in France during World War I. My assignment at the time took me to nearly every city of France and in most of them I found one or two of these beautiful trees. They were nearly all of about the same size, 70 or 80 feet tall, and from three to four feet through. They were all, or nearly all, planted on the grounds of churches, monasteries and convents, and I was told that they were brought back and planted there by the Crusaders on their return from the Holy Land.

Shortly after the Armistice I was assigned to the University of the American Army at Beaune. Dr. Kenyon Butterfield, president of the Michigan State College at East Lansing, was in charge of the instruction in agriculture, and we had several

talks about this beautiful tree and the desirability of introducing it into America. Finally he said to me, "If you will collect the seeds, I will send a small package to every state college south of Mason and Dixon's line and ask them to try them out."

I bought a special grip and, as I went about, I gathered cones from the different trees. I soon had the bag filled, and went to Paris to deliver them to headquarters. I had three grips, one new, which contained the seeds.

I set them down near the mouth of a subway and went across the

street to ask directions from a taxi driver; but my French was undoubtedly pretty poor, and perhaps he was also purposely obtuse. At any rate, when I got my directions and returned to my luggage, the grip containing the cones was gone. I can well imagine that the language the thief used when he discovered the contents of the grip may not have been altogether scriptural, or at any rate not in scriptural sequence. I was ordered home soon after that and never had another opportunity to make a collection of the seeds.

The cedar of Lebanon, as it grows in the open spaces of France, is pyramidal in shape with long branches on the lower trunk and shorter ones at the top. It has fine, soft, dark green needles which grow in clusters, but its distinctive beauty is its cone which is from three to five inches in length and about two and a half to three inches in diameter. Unlike the cones of most conifers, these cones stand upright upon the branches. As they come out in the spring, they are of a light green color, turning with the season, first yellow and then red. It takes about three years for the cones to develop, after which they hang on the tree for two or three years, where, during their prime, they look like great red bouquets.

The cedar is a long-lived tree. If, as reported, the large trees to be seen in France were planted by the returning Crusaders, they must be 700 or 800 years old, and the size would indicate slow growth. But all trees in

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This cedar of Lebanon stood at Flushing, New York, until 1934 when it was killed by lightning

Keep green



FORESTS ARE
NATIONAL RESOURCES



BEAR IN MINIATURE



DON'T BE
A FLIPPER

WANTED
An Idea!

American Forests Offers \$100 in Cash
Awards for Ideas Which Can Be Developed
into Effective Forest Fire Prevention
Posters. Here's Your Chance to Show
Up the Experts — and Help Stop Fires

No doubt you have seen hundreds of forest fire prevention posters—along the road, beside the trail, in store windows. Some have impressed you, others have left you cold—with the feeling, perhaps, that you could do a better job of it yourself. Well, here's your opportunity. American Forests offers cash awards—a first prize of \$50, a second prize of \$25, and three \$10 prizes—for the most original and effective ideas (design and slogan) for a forest fire prevention poster. Finished art work is not necessary. Merely sketch out your design and slogan—it's the idea that counts.

Submit as many ideas as you like—but be sure your name and address is plainly written on the back of each. The editors of American Forests will act as judges, and their decision shall be final. All entries must be mailed, or delivered to the offices of American Forests, 919 17th Street, N. W., Washington 6, D. C., not later than September 30, 1946.

BETTER SLOGANS — FEWER FIRES

By JAMES D. CURTIS

WHAT will the well-dressed forest fire prevention sign wear in 1946? In many cases it will be the same old regalia, yes—even the same expression that it has worn for many seasons. But some of them will be spic-and-span new, right up to the minute. They will have expressions you will never forget. They will, in fact, be knockouts.

Faced with the necessity of reducing the appalling annual loss from forest fires—enough timber went up in smoke in 1944 to build 138 thousand average homes—forest fire control planners must educate people of all ages, speaking many languages, in innumerable places. There is, furthermore, a new generation just “around the corner” who must, in turn, be reached and convinced as their parents were before them. Thus, the task goes on ad infinitum. Of the two methods of fire prevention, education and law enforcement, the former is far preferable; the latter is only used where education fails.

Most Americans “believe in signs”—that is, if the signs are convincing enough. Advertising forest fire danger to John Q. Public is a tough job because, while he has a genuine stake in what is being advertised, he cannot buy it and take it home as he would a new suit. Nevertheless, the medium of signs and slogans to acquaint people and remind them continually of the drastic results of fire, is soundly conceived. And if it were a matter of impressing a particular section of the public, or even warning people in general about fire from a single cause, the problem would be reasonably simple. Unfortunately, such is not the case. All kinds of people start all kinds of fires.

The U. S. Forest Service and most

state agencies recognize eight possible origins of forest fires—lightning, railroads, lumbering, smokers, campers, debris burning, incendiaryism and miscellaneous. Fires of unknown origin are placed under the probable cause.

No measures can be taken effectively against prospective fires unless the causes of past ones are known. This is where real fire prevention starts. Theoretically, all are preventable except lightning. If, then, as a major effort signs are to be the means of prevention, they must be well-aimed to hit directly on the cause and to produce a public awareness of the consequences of fires.

What constitutes a forceful forest fire prevention sign? Most experts agree that a combination of illustration and a suitable message of exhortation is preferable to either one alone. There are exceptions, to be sure, as witness the surprise on the road along Moosehead Lake in Maine, which informs all and sundry that “This Is God’s Country. Why Set It On Fire and Make It Look Like Hell?” Or the New Brunswick plea, “Leave the Forests as Green as You Found Them.” Pennsylvania signs inform the passersby that “Everybody Loses When Forests Burn” while Quebec tells the public that “Fire Sweeps Where Carelessness Creeps.” Such slogans are pretty well in a class of their own.

There is often the difficulty of language. Obviously, allowances must be made for those to whom English is foreign. Signs on the Maine-Quebec border are commonly in French only, but are sometimes bilingual. In certain places the U. S. Forest Service finds it necessary to use the Polish

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SMOKEY SAYS—

**Hold 'till it's cold.
prevent forest fire**

SMOKEY BEAR'S STORY

“Once upon a time there were three people: a teeny-weeny baby person, a medium sized momma person and a great big poppa person.

“One day, momma person decided it would be nice to go on a picnic. Poppa person went for the idea like a bear goes for honey. So, they packed some stuff, got into their car and headed out to the country. On the way, poppa decided he wanted to smoke so he took out a cigarette, lighted it with a match, and then—now get this—broke the match and put the pieces in an ash tray.

“Soon they arrived at Farmer Smith’s place. They could see him in a big field near the woods, burning brush. Momma person looked very carefully at what Farmer Smith was doing.

“Look, poppa,” she said. “Farmer Smith has waited until this nice day without a wind blowing to burn his new ground. And he has plowed all around the brush piles, and he has those pails, filled with water, handy, and his two boys are helping him. His burning won’t get away into the woods.”

“Then they were in the forest. And poppa built a little campfire so mamma person could cook a nice steak. They had a fine time, especially baby, because Poppa let the little fellow help him put the campfire dead out with cans of water when they were ready to go home.

“And they lived happily ever after, enjoying many safe picnics in the forest.”

Smokey Bear says this isn’t a fairy tale. It is true. “Things can happen just like I’ve told, when people are careful with fire in the woods.”

Smokey tells his story, written by W. W. Bergoffen, on a recording transcribed by the U. S. Forest Service, and made available to radio stations.

ISLAND of the EAGLES



By JOHN D. KENDIC

Mt. Johnson Island in the picturesque Susquehanna River of Pennsylvania, a 21-acre woodland paradise, is the only known sanctuary for the bald eagle

The nearly round, hilly island—heavily wooded and undisturbed



SOME years ago I was with friends at Peachbottom, along the Susquehanna River, in southeastern Pennsylvania. It was a hot mid-summer day as we set out in a motorboat for a fishing trip upstream. We pushed our way out of the secluded cove, away from quietly moored boats and ramshackle fishermen's huts, and slid under a railroad bridge into open water.

Almost immediately I caught a glimpse of a nearly round, hilly island up the river. From a distance, it appeared heavily wooded and undisturbed, almost primitive in character. It so aroused my interest that I knew I would never be satisfied until I set foot upon it. In fact, where I was concerned, the fishing trip was forgotten then and there.

My friends, good hosts that they were, turned the boat toward the island and soon we were scraping on its narrow shore. A steep slope led up, almost from the water's edge, into a heavy growth of shrubs and trees. We secured the boat and started to climb, noting on our way scattered old white ash and fringes of young black locust and papaw. The ash trees were about eight feet in circumference, crooked trunked and with large curving upper branches. Now and then there would be huge red oaks, tall and impressive, some ranging from 10 to 13 feet in circumference at breast height.

When we found an opening in the canopy above, where some old tree had fallen, a great bird could be seen against the sky, screaming out its displeasure over our invasion of its solitary hilltop home. A river boy, who was with us, said there were eagles on the island, but we thought little of it then; we were more interested in the forest.

In a short time we were working our way down the other side of the hill through a heavy stand of nearly pure tuliptrees, under which jewelweed grew to a height of about three feet. Farther along, as the slope downward grew steeper, there was a more northern hardwood type of black birch, red maple and a scattering of beech. All along we had seen sugar maple reproduction and then, at last, a few large trees. Then, as the drop became more precipitous and rocky, we found ourselves in a section of pure chestnut oak, ranging around four to six feet in circumference. Swinging around, we soon were

back in red oak and white ash where we had started.

In our partial tour of the island we had noticed no sign of timber cutting, and the only evidences of outside interference were scattered fire scars on fallen trees and the heel of a man's shoe. In all, we had found 20 or more different kinds of trees and shrubs, but undoubtedly there were more. Sassafras, black walnut, ironwood, shagbark hickory, basswood, hemlock, striped maple, red bud, dogwood, spicebush, Virginia creeper, and even poison ivy had been noted. Certainly it was an interesting variety of plant life. We left the island thinking mostly of the trees and shrubs found there, and hoping to return some other day.

That day came seven years later when, with Dr. Herbert H. Beck of Franklin and Marshall College, I returned to see not the trees so much as the big birds which I had since found really were eagles. From Dr. Beck I learned much interesting information about Mt. Johnson Island, as it is called, and its famous tenants.

While the island is the only known sanctuary for the bald eagle in the world, it is also a sanctuary for all other bird, tree and plant life. Owned by the Philadelphia Electric Company, it has been leased by the National Association of Audubon Societies. Here, on a 21-acre island hill, all natural life is free to live undisturbed. Here one can feel and experience a sense of primeval wilderness life. Somehow the island seems set apart, almost as if it had never been visited before. The great trunks of trees rise up through thick masses of

heavy foliage into which sunlight barely penetrates.

Starting up the steeply sloping hillside to this secluded world of the eagles, you do not tramp along a distinct path or trail. Indeed, a guide is needed if you are to visit the right places. You cannot help but be impressed by the tall, sprawling old trees along the way, the thick underbrush and the occasional large fallen trees. On the ground in early spring there will be hundreds of large white trilliums, May apples, jack-in-the-pulpits and many other interesting flowering plants.

You come upon an eagles' nest on the crest of the hill. There it is, 85 feet up in the air, securely lodged in the sturdy crotch of a towering old red oak. The big birds have nested on this island for hundreds of years—sometimes with difficulty. In 1937 a nest was blown out of a decaying tree in which it had been unwisely built.

The nest, about four feet in diameter and four feet deep, is a huge bulky affair, built from coarse sticks, roots, turf and plant stalks. It is thought by Dr. Beck to be one of four known nests in Pennsylvania. Two, or rarely three, eggs are laid each year, usually around the latter part of February or the early days of March, often while snow is still on the trees. When strangers approach, the male bird is apt to fly away, leaving the female to circle around above the nest.

One pair of eagles will range over a certain territory and allow no others to enter their domain, though birds such as the great horned owl

may nest nearby. Fish makes up about 95 percent of their diet, and much of this is carrion which they spot floating down the river.

This day proved to be one of those exceptional times when the female perched very accommodatingly, and for quite a long time, on a readily observed limb in full view. There, through field glasses, this regal monarch of our skies could be carefully watched and studied. The noble white head with its golden beak flashing in the sunlight, the deep rich brown of the large wings, which have a spread of six to seven feet, the white tail feathers and the bright yellow talons provided a truly inspiring sight. Our National Emblem in its own element—the American bald eagle at home on Mt. Johnson Island.

As you leave the nest tree and find your way back through the deep woodland to your boat, and then ride dreamily along the steep, rock tilted, often inaccessible shore, you cannot help but look deep into the dark shadowy wooded island and marvel at this fine example of an unspoiled natural paradise. It is almost as if it were sleeping under a strange spell of the ages, a wilderness hardly touched by the passing of years.

Someday when you are in southeastern Pennsylvania and want a little trip that is different, get the necessary permit from Dr. Beck and go winding down through picturesque hill and valley country to Fishing Creek, where an experienced riverman by the famous sea-going name of Drake will take you out to Mt. Johnson Island—an isolated world of old trees and eagles that you will long remember.

Eighty-five feet in the air, securely lodged in a towering tree, the big birds built their nest—four feet in diameter and of equal thickness—of sticks, roots and turf



Bear Trees



By WILL C. MINOR

A camera hunter on Colorado's Piñon Mesa discovers that Bruin leaves an indelible claw record of his passing on the soft, white bark of the quaking aspen. Why?

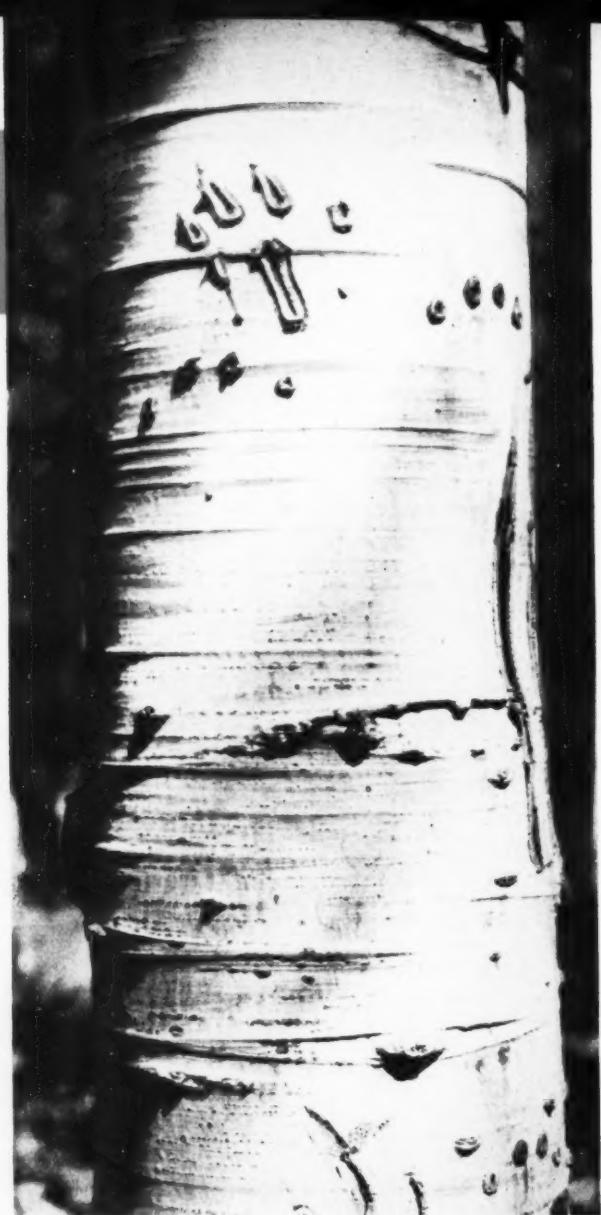
I WAS almost upon the big aspen before I noticed the claw marks, but I knew immediately that I was viewing a "bear tree" for the first time. For plainly stamped on its white bark about four feet from the ground was the outline of a bear's paw. It was so sharp and clear that for a moment I thought it had just been made, but on second glance I saw that the marks had healed over, a process that requires years.

By inquiring among older residents of this Piñon Mesa area in western Colorado, I learned later that this particular bear track was known to have been on the tree for at least 30 years.

Intrigued by my discovery, I started looking for other trees that bore the marks of bear claws, and before the summer was over I found 132 within an area of four square miles. Some of the trees bore just the outline of a single track, but others were a mass of scars. These, obviously, had been climbed many times.

All of these bear trees were quaking aspen. The soft, smooth, white bark of this species is easily marked and when Mr. Bruin sinks his claws into it he leaves an indelible record of his passing. For when injuries or scars on an aspen heal over they turn black, contrasting sharply with the white bark. If he had elected instead to climb a pine or spruce, as he no doubt does, a bark record of the event would be difficult to find, perhaps impossible over the years.

At one time it was common frontier belief that each bear claimed a certain territory as his own, and that the claw marks he left on trees were a claim stake to mark his domain. It was also said that the bear would stand erect and place his mark on the trunk as high as he could reach, to show how big—and tough—he was. Then if another, and bigger, bear came along and placed his mark above the first one, it was time for the original claim owner to move on—or else!



Some of the trees, like this one, bore the scar of a single bear track. Others were a mass of claw marks

If there were any truth in this theory some of the bears intended to make certain that their claims would not be jumped, for in numerous instances they left claw marks in the very tops of trees. But even if one bear would respect another's claim, it is quite plain that the beavers would not.

I saw one bear tree that a beaver had cut and built into his dam. A section with a well defined bear track on it had been built into the top of the beaver's house in such a manner that the track was prominently displayed. Perhaps this appealed to Mr. Beaver's artistic sense—or his sense of humor.

Aspens are tall, slender trees, usually without forks or heavy limbs. The branches are small and fragile. It is not uncommon for a climbing bear to break off all but a handful of small branches in the crown of a tree.

I found two large aspens standing side by side, about ten feet apart, that were almost completely covered with scars made by bear claws. In fact, the surfaces of those trees consisted more of rough black scars than they did of smooth

white bark. In places, where the bear would sink his claws into the bark, the marks would heal over leaving an easily recognizable outline of his paw. But sometimes his claws would slip and leave long ragged scratches several feet in length. I saw one tree that plainly showed where a bear had slipped and slid nearly 40 feet back down the trunk. Every claw on one foot had plowed a deep furrow in the bark straight down the side of the tree.

These trees with the marks of bear claws make interesting photographic subjects. One day I found and photographed an aspen with a clearly defined set of old bear tracks on it. Next day I happened to pass the same tree and noticed that during the night a bear had added fresh claw marks. So I set up the camera and snapped another picture, this time with old and new tracks side by side.

Oddly enough, the marks left by bears that have climbed high up on trees on Piñon Mesa are at least several years old. There are plenty of fresh scratches and claw marks in places that can be reached from the ground, but none made recently high up on the trunk. With bears still plentiful in

this vicinity, it appears as though present day bears are not addicts of the tree climbing habit.

Which brings up the question, why did bears climb the aspens in the first place? Certainly there is nothing edible in the tops of the Piñon Mesa trees that bears might be searching for. And aspens are rather small trees and offer no secure forks or wide-spreading branches where Mr. Bruin might curl up and take a nap. Neither could they have been satisfactory lookout points, for they were surrounded on all sides by other trees of equal height. Possibly bears roaming the country are moved by the same impulse that seems to compel some people to carve their names in the bark of every available aspen.

Recently I found a large aspen on which someone many years ago had carved his name and the date of his handiwork. A bear had scratched out the name until it was no longer legible, but the date, August 10, 1911, was still there. A few inches above where he had scratched out the name, the bear left a clear imprint of his claw. It was just a single track, but the mark of every claw was as plain as if Mr. Bruin had used an ink pad to leave his footprint on a sheet of paper.

Of course, that carved name meant nothing to the bear. It had merely been a convenient place for him to reach when he decided to scratch on a tree. But it looked for all the world as if he had deliberately scratched the man's signature from the tree and placed his own there instead.

Scratches and claw marks made near the base of trees may be easily explained. The bear, in all probability, was merely cleaning or sharpening his claws by scratching on something solid, in the manner of a house cat. But that does not explain why he should climb and leave his signature in the very tops of trees.

In one place were three aspens, each about 10 inches in diameter and 50 feet high. Each tree had the marks of bear claws all the way up the trunk. And in all three trees the branches were broken off. Only a cluster of small branches remained in the tops, giving the trees the appearance of a brush on a long handle.

As I was examining these bear trees a porcupine came plodding along with his head down, picking choice blades of grass. He was so absorbed with his lunch that he almost walked over my foot before he saw me. When he did, he gave an audible gasp of surprise and leaped, with surprising agility for a porcupine, to the nearest tree and went up it like a lineman going up a telephone pole. He did not stop until he reached the small cluster of branches in the top. Then, from his lofty perch, he cautiously peered down, trying to determine what manner of beast it was that had frightened him.

I examined the tree to see if the porcupine had left any claw marks. Sure enough, here and there, his claws had pierced the bark enough to leave an outline of his paw, which looked like miniature copies of the old bear tracks beside them.

Perhaps that incident may explain some of the bear trees. It may be that Bruin became frightened, same as the quill-pig had, and climbed the first tree he saw. Still, it does not explain those numerous trees that bears climbed so many times that it must have become a habit with them.

But regardless of whether bears climbed the trees because of fright, or in a spirit of investigation, or for some entirely different reason known only to the bears themselves, the fact remains that they did climb large numbers of aspens on Piñon Mesa, and left their claw marks to prove it.

I still wish that I could have seen the expression on the face of one of those bears when his claws slipped and he came sliding back down the tree.

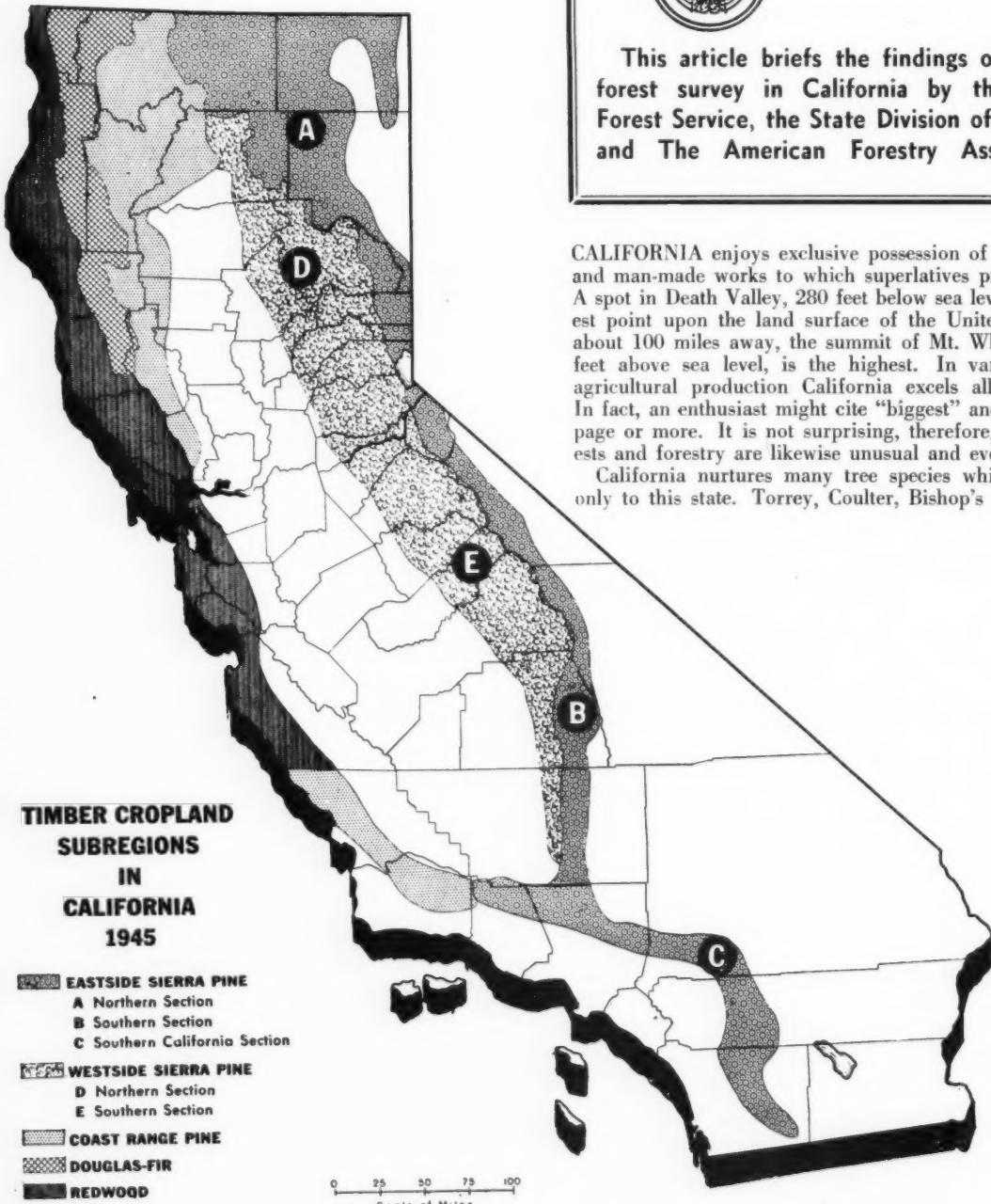
What happens when Bruin slips. May be his claws were dull—or there was too much bear for the soft bark



CALIFORNIA....

THE UNUSUAL IN FORESTS AND FORESTRY

By BURT P. KIRKLAND



This article briefs the findings of a joint forest survey in California by the U. S. Forest Service, the State Division of Forestry and The American Forestry Association.

CALIFORNIA enjoys exclusive possession of many natural and man-made works to which superlatives properly apply. A spot in Death Valley, 280 feet below sea level, is the lowest point upon the land surface of the United States and, about 100 miles away, the summit of Mt. Whitney, 14,501 feet above sea level, is the highest. In various lines of agricultural production California excels all other states. In fact, an enthusiast might cite "biggest" and "best" for a page or more. It is not surprising, therefore, that her forests and forestry are likewise unusual and even superlative.

California nurtures many tree species which are native only to this state. Torrey, Coulter, Bishop's and Monterey

pines grow along the California coast and nowhere else in the world. Digger and knobcone pines are rare outside the state. Most of the true cypress species, the bigcone fir, close relative of Douglasfir, certain of the true firs, are not found elsewhere. Other valuable species are shared with other states. These include several of the true firs, particularly white fir; incense cedar, common throughout the Sierra and on the eastern slopes of the Northern Coast Range, and Sitka spruce, Port Orford cedar and western hemlock, sparingly invading northern coastal areas from Oregon.

The best known western commercial tree species, Douglasfir and ponderosa pine, are here widely distributed. The former is slightly inferior in development and less resistant to fungus diseases than on the better sites in the Pacific Northwest. Ponderosa pine, common to all states west of the Great Plains, grows nowhere so fast as on the western Sierra slopes and foothills. Jeffrey pine and sugar pine (largest of all white pines, frequently attaining diameter of eight feet or more) are shared sparingly with Oregon and Nevada. All these possess soft workable wood, useful in many ways.

Crowning glories of California's trees are the two species of sequoia. Individual giant sequoias are biggest of all living trees, while coast redwoods, one of which has been measured as 364 feet in height, are believed to be the tallest trees in the world.

The sequoias have a long geological history and are survivors of a mighty race. Fifty million years ago, they were growing near the Arctic Circle, in what is now Alaska. Half as long ago, they covered much of western North America. They appear in our petrified forests. Except for coast redwood's presence in Curry County, Oregon, the two surviving species are indigenous only to California.

Their silvicultural characteristics are unusual. Giant sequoia occupies small areas in the Sierra at about 5,000 feet elevation. Its outstanding characteristic is ability to survive longer than any other living thing. Resistance of the wood to decay is a major factor in its long life span. Although it grows well and is hardy in many Pacific Coast locations as far north as the Canadian border, it is not yet clear that the giant sequoia would be generally useful in commercial forest management. Possibly this is due to the average forester's inability to think of this species in terms of ordinary forest rotations. In California, opportunities to extend its range are limited.

Coast redwood, on the other hand, now occupies about 1,750,000 acres of generally favorable sites and can probably expand. It is not as hardy farther north as giant sequoia, but it has even more valuable silvicultural characteristics. It sprouts readily and to an older age than any other tree species, thus confirming the aptness of its name, *sempervirens*. It also grows rapidly. In its long history, this species, like the other, has acquired substances protecting its wood from attacks from most fungi. Redwood lumber is workable and beautiful. Altogether, these characteristics place the species in the front line for intensive forest management.

Besides its conifers, California has exclusive claim to certain oaks and also constitutes the principal range of several more widely-distributed Pacific Coast oak species. Other broadleafs — such as California buckeye, redbud, walnut, sycamore — are represented. Due to dry summers in most localities where they occur, few of these are commercially important. Tanoak, long an important source of tannin, has commercial possibilities which, so far, have been little utilized. California laurel, an interesting ornamental species, has wood of great beauty when used in turnery, and occurs sparingly. These species, together with the commercially useful red alder, occur in the redwood region.



Above, eastside Sierra pine after selective cutting. Size of sugar pine in foreground is indicated by man at base of tree. Below, giant ponderosas, also in an eastside Sierra forest.





This sawmill in the Mother Lode country is supported by managed forests of westside pine and associated species

Through the years, California has exchanged tree species with other lands in the Pacific area. Monterey pine and coast redwood are widely planted in Australia and New Zealand. In its turn, California provides hospitable sites for eucalypts and auracarias from Australasia. These species, though of great commercial value at home, have not generally become so in California. However, the eucalypts are extraordinary in their ability, even in small groups, to grow tall straight trunks on sites that formerly produced only scrubby orchard-type oaks. Formerly over-rated, eucalypts now appear to be under-valued for forest use for farm and ranch planting.

Physiographically, California may be described as a great central valley system, framed by three major mountain ranges and several minor ones, bordered on east and south by a vast desert, with high, sharp ridges scattered over it, and a marked depression featuring the far southern end.

White occupancy has resulted in a considerable and varied agriculture, largely supported by irrigation. Natural vegetation ranges, according to moisture supply, from dense forests through open woodlands, grass, chaparral, sagebrush, to desert forms.

From the accompanying diagram, it can be seen that tree growth occurrence begins at the ocean shore, with the redwoods, extending inland 15 to 30 miles, upon favorable sites, from Monterey County, northward to the Oregon line. East of the redwoods, in four counties, is a narrow belt of predominantly Douglasfir forest, and beyond this, along the Coast Range, northward to the Siskiyous, is ponderosa pine and a few associated species. The high Sierra system is the home of ponderosa, sugar and Jeffrey pines, with many other species. These associations vary, somewhat, as between eastern and western slopes. The so-called eastside pine type extends southward, far into the desert, while the coast pine follows the southern end of the Coast Range, across Santa Barbara and San Luis Obispo counties, to meet the redwoods.

However, not all California forests are superlative in quality. Out of a total of 45,515,000 acres classified as forest land, only 17,110,000 acres are rated as "timber cropland." Of the timber cropland, only 26 percent bears "dense" and "semi-dense" stands, rated generally as most desirable silviculturally; 42 percent bears "open" stands; nearly 20 percent has "very open" and about 12 percent is "unstocked." Forest conditions on the meager portion of California's land area, subject to timber cropping, are therefore far from satisfactory.

Slightly over half the timber cropland area bears old-growth stands; about one-fourth has old-growth and young-growth, intermingled; the remainder includes young stands, seedlings and saplings, and unstocked area. Only one-fourth of the timber cropland is of high site quality, and slightly over half is of medium quality. The remainder rates very low. This means that, while there is a considerable area of forest land rating among the best of the north temperate zone, much of the state's timber cropland is of low productivity.

The total sawtimber volume is estimated at 243.4 billion board feet, but of this, 15.8 billion has been included in parks and similar areas withdrawn from commercial use; 15.9 billion is in other recreational areas; and 29.6 billion is rated as inaccessible. Thus, whittled down, the available commercial supply is only 182 billion board feet. The 61.4 billion board feet of timber withdrawn from commercial use in parks, on other recreation areas or rated as otherwise unavailable, is more than double the volume thus reported for any other state. It seems logical that much of this timber may eventually be diverted to commodity uses. One hundred nineteen billion board feet, or about half the standing sawtimber of California, is in public ownership, and 124 billion board feet is privately owned.

Recognized forest types with the commercially available stand of timber in each area include: Eastside Sierra pine,

28.8 billion board feet; Westside Sierra pine, 68.8 billion; Coast Range pine, 20.8 billion; Douglasfir, 17.8 billion; redwood, 45.8 billion. There is a tendency for the southern portions of all type areas to be more lightly timbered than the northern. These quantities include all species within each type; thus, in the redwood type, the available timber includes 11.6 billion board feet of timber other than redwood. The location of each type is shown on the map on page 318. Considering the species, regardless of where they occur in the various types, the available timber is distributed to ponderosa pine, 45 billion board feet; sugar pine, 17.4 billion; redwood, 33.2 billion; Douglasfir, 46.2 billion; white and red firs, 33.8 billion; and incense cedar, 6.4 billion.

Commercial forest land (forest land not officially withdrawn from commercial timber use) is 16,405,000 acres in extent, of which 8,122,000 acres is in public (mostly federal) ownership, and 8,283,000 in private ownership. Timber cropland withdrawn from commercial use, mostly in parks, covers 705,000 acres. Rated in the total forest area, noted earlier, is 28,405,000 acres "chiefly valuable for purposes other than timber." Not only is this vast non-commercial forest area unusual in its extent, as compared to similar areas of other states, but it is also unusual in the characteristics of the several brush and woodland types of which it is composed. Unique is the classification of more than two million acres of coastal sagebrush in this type of forest. There are also included other brush types

having few species, popularly classified as trees. On the other hand, some of the woodland types included may, when oil resources have been reduced, become important sources of fuel supply. The principal use of these non-commercial forest areas is for grazing and as vast watersheds collecting water for domestic and industrial uses and for extensive irrigated lands throughout much of the state.

Bearing in mind the great variety of conditions of vegetative cover on brush-covered watersheds, that many receive 20 inches or less of rainfall annually, that frequently no more than 20 percent of the rainfall is yielded to streamflow, and that irrigated areas may require water to a total depth of as much as 48 inches in a year, it is probable that from 10 to 30 acres of such watershed may be required for each irrigated acre in the state. No doubt the water yield from the better forest cropland is much greater. Exploration of these problems on individual watersheds has barely begun. Study of each is necessary to ascertain facts of its behavior and to develop an action program sound both in its engineering and land management features. On some watersheds, controlled burning of brush cover may be desirable; on others, strictly taboo. Except in rare instances, to accomplish purposes of forest management, burning should nowhere be extended to commercially valuable forest growth. These relationships constitute one interesting example, among many that could be cited, of interdependence of different resources.

(Turn to page 328)

Fire fighting in Los Angeles County. This woodland type of vegetation is typical of much of Southern California



NEVADA

By JOHN B. WOODS



This article previews the findings in Nevada of the Forest Resource Appraisal of The American Forestry Association. Other states will be similarly presented in coming issues.

NEVADA is a big state. East of the Mississippi River none approaches it in size, and in the West only five are larger. Its 70,273,000 acres, or roughly 109,821 square miles, contain, on the average, less than one resident for each square mile. Some of these people are scattered in remote valleys and canyons, ranching, mining, or attending to the protection of public forests and ranges. Along the half-dozen, far-flung arteries of travel and transport are occasional hamlets, augmented in certain favored areas by the occupants of river-bottom ranches, in others by modern mining camps.

More than one-third of all Nevada's inhabitants can be found in the Reno-Carson City-Fallon locality, where irrigation, mining, transportation, tourist travel, recreation, law-making and human relations combine to support agriculture, industry and commerce. Far to the southeast, where Boulder Dam impounds the world's largest artificial lake, Boulder City and nearby Las Vegas add materially to Nevada's urban population.

On most highway routes, the traveler across Nevada sees chiefly a forbidding country of high semi-desert, punctuated by still higher, rocky ridges. However, if one enters at the northeastern corner, either from the Great Salt Lake Desert or the Snake River Valley, he crosses a 60-mile stretch of barren highlands and then comes down to the westward-flowing Humboldt River. By U. S. Highway 40, the motoring distance from Wells to Humboldt Sink is about 270 miles. As the covered wagons rolled a century ago, the mileage considerably exceeded 300, and for trail-worn immigrants this river route was a wonderful boon, offering grass for their stock and sweet water for all. Today, these meadows are producing grass and other crops for hundreds of ranchers.

Beyond Humboldt Sink, the ground rises brokenly toward the California Sierra. Two major streams, the Truckee and Carson, and several minor ones, flow down out of these mountains to lose themselves in low sinks. Nowadays, by virtue of irrigation works, these rivers and creeks nourish towns and many ranches, and in summer little of their water goes to waste in the low country.

Along the northern route across Nevada, timber is not

— WHERE FORESTS ARE FEW AND FAR BETWEEN

in evidence. At one or two points, near the Idaho and Oregon lines, there are small patches of pines, firs and aspen in the higher areas of Humboldt and Toiyabe national forests. But these are distant and out of sight. The flanking ridges are sometimes brush-covered, but more often naked rock. Near the California boundary, however, the mountains which hem in the Truckee and Carson rivers and gem-like Lake Tahoe bear an extensive and varied forest.

About the lake, and for some little distance north and south, the stand is chiefly Jeffrey pine, a close cousin of ponderosa, which also is present in modest numbers. In such a region, the forest vegetation usually shows relationship to elevation, and this is no exception. From about 5,000 to 6,500 feet, there is the yellow pine type. From 6,500 to 8,000 feet, the pine occurs in mixture with white fir (*Abies concolor*). Just above 8,000 feet, the white fir is joined by red fir (*Abies magnifica*) and, still higher, at about 8,500 feet, there is lodgepole pine. But this is not all; along with the lodgepole occurs some western white pine and, above that, still are limited areas of whitebark and foxtail pines.

Eighty years ago, the famous Mother Lode was rife with miners. And the accessible forests took a beating. It is said that more than 600 million feet of good timber was used in the mines and for structures above ground. Mt. Rose, which pokes its summit into the sky half-way between Lake Tahoe and Reno, was the center of this activity; there was even a flume carrying timbers down from her slopes to storage yards below.

Practically nothing escaped this onslaught. Even the Pinyon-juniper stands of the Washoe and Minden areas were converted into firewood. Little or no thought was given to growing new forests, yet considerable tracts of these cut-overs did escape serious and repeated fires, so that today there are excellent stands of second-growth upon these slopes. Probably four-fifths of the pine areas have regenerated, although some but scantily, as have most of the pinyon-juniper woodlands.

At present, of a total commercial forest area in this region of approximately 98,000 acres, only about one-third is old growth. Something like 32,000 acres of original forest has been ruined, apparently for keeps.

The pinyon-juniper woodlands, which have been re-stocked, are larger; nearly 200,000 acres of second-growth are now in evidence. It is worth noting, too, that an estimated 42,250 acres of these escaped destruction in the hectic mining days.

Here, probably more than elsewhere in Nevada, the Indians value their traditional claim to certain fruits of the forest. Each year, they move into the pinyon-juniper stands to gather pine nuts. They have always done this; before the white man came, they ground the nuts into flour for winter use. Nowadays, they sell much of their harvest to confectioners. Naturally, they went wherever they found nuts, and two of the best spots were in the Sweetwater and Pine Nut mountains, parts of which were placed in the Mono National Forest.

Putting these areas in a national forest meant nothing to the Indians; that is, until the Forest Service issued wood-cutting permits to white men, and thus threatened to reduce

the nut production. Then the Indians uprose, vocally, and with such good effect that Uncle Sam now recognizes their prior claim to the nuts in these particular localities.

Ownership of the commercial forest land in this locality is largely private. In 1940, when the U. S. Forest Service made a detailed study of the vegetation, 13,000 acres of the better tree-growing land was in possession of ranchers and permanent or summer residents. About 61,000 acres belonged to industrial companies, at least one of these being an important West Coast forest managing concern. The national forest holdings were then 24,000 acres. There has been little change in the ownership pattern since 1940.

Far to the southeast, near Las Vegas, is the Clarke County Game Refuge, a region of picturesque canyons, dominated by Charleston Peak, nearly 12,000 feet high. Coming up out of the desert, the traveler enters a thrifty stand of ponderosa pine, short-bodied but big in girth. Cut over in the early days, this forest has regrown. To westward, toward the hamlet called Pahrump, the lower country is a garden spot, watered by artesian wells, which presumably owe their continued existence to the timber above.

Roads have been pushed into the mountain area from the east, and it is indicative of the interest shown in such beautiful spots, that within the game preserve boundaries there also are a unit of the Nevada National Forest and Las Vegas Mountain Park, as well as a resort or two.

Forty miles northeast is the Hidden Forest of Sheep Peak, also ponderosa pine. Although well enough known nowadays to appear on an oil company's highway map, this small patch of timber is well hidden from highway travelers, and too remote to suggest commercial operation. It lies within a larger unit of the Clarke County Game Refuge, an area now specially watched over by the U. S. Fish and Wildlife Service, which is seeking to re-establish mountain sheep upon the ranges where once they were abundant.

It is apparent from the foregoing that forests are not numerous or extensive in Nevada. As has been noted, the commercial acreage is negligible—approximately 98,000 of a total forest area of 4,720,000 acres (according to 1944 estimate by the U. S. Forest Service).

The non-commercial forest land, comprising chiefly pinyon-juniper, with a small acreage of high mountain forests in the west and negligible aspen areas in the north, is chiefly in public ownership. Upon the national forests are 1,690,900 acres so characterized. The public domain, included in grazing districts, has 1,319,400 acres, while other federal lands, including wildlife refuges account for 879,600. Indian lands, managed by Uncle Sam, contain 347,000 acres of pinyon-juniper woodlands.

Ranchers hold 75,800 acres of non-commercial forest as part of their summer range, while industrial concerns, mostly mining companies, hold an estimated 306,700 acres. Little or no fuelwood or mine timbers are currently being taken from these lands, except by nearby ranchers. The mines which, in active times, use considerable quantities of timber, find it economical to import most of what they need.

The Forest Service reports that 3,114,000 board feet of lumber was produced in the state in 1944. Poles added up to 17,000 linear feet, or 192 cords. Fence posts, equivalent to 62 cords, and 505 cords of fuelwood made up the balance. Practically all of this material was recorded in the Reno-Carson locality. One small sawmill produced the lumber.

It is interesting to note that while lumber production in Nevada since 1926 has remained under the 1944 figure, the consumption of that commodity within the state has ranged between 32 million and 53 million feet, prior to 1942. In that year, it started upward and has exceeded 100 million

(Turn to page 342)



Miles of juniper stretch along this Nevada highway



Scattered ponderosa pine and fire scarred hillsides



Hay and other crops grow in Humboldt River bottom

AMERICAN HORNBEAM

Carpinus caroliniana Walt.

By WARREN D. BRUSH

AMERICAN hornbeam is a small bushy tree with long, slender, tough, more or less zigzag branches, forming a wide-spreading, flat or round-topped crown. The usual height is from ten to thirty feet with a trunk diameter of one and a half to two feet but it sometimes attains a height

of sixty feet and a diameter of three feet. The short trunk and larger branches are characteristically furrowed and ridged, often irregularly, and are covered with a thin, tight and smooth bluish gray bark which has given it the name "blue beech", common in some localities. It is also

called "water beech" because it so frequently grows near the water. Another name applied to it is "iron-wood" from the extreme hardness of the wood. Like the hophornbeam, it is found over nearly all the eastern United States from Maine westward to Minnesota, and south to eastern Texas. It is most abundant and attains its largest size in the South Atlantic States and in eastern Texas. The tree prefers low moist bottom-lands and is often seen along the banks of streams where the shade is deep and the moisture plentiful, frequently forming an understory in forests of mixed hardwoods.

The leaves, like those of the hophornbeam, are more or less egg-shaped in outline with long-pointed tips and doubly saw-toothed margins. They are somewhat smaller than those of hophornbeam, however, measuring from two to four inches in length and one to one and three-quarters inches wide. They are thin and firm, pale dull blue-green above, light yellow-green below and are borne on slender, hairy stems about one-half inch long. The slender yellow midrib and numerous slender hairy veins are very conspicuous. In the fall they turn scarlet and orange.

Hornbeam (*Carpinus*) differs from other members of the birch family in that the pollen-bearing catkins are not formed until the spring of the year in which they mature. They measure from one to one-and-a-half inches in length when fully grown and hang near the ends of short lateral branches of the preceding season. Slender-stalked, semi-erect female or pistillate catkins are borne at the ends of the twigs. The fruit consists of a small nut about a third of an inch long borne at the base of a leaf-like, coarsely saw-toothed, short-stalked bract from one to one-and-a-quarter inches long and nearly one inch wide, and crowded on slender, hairy, red-brown stems five to six inches long.

The small, narrowly egg-shaped to oblong, pointed winter buds are about one-eighth inch long. They are chestnut-brown to reddish brown



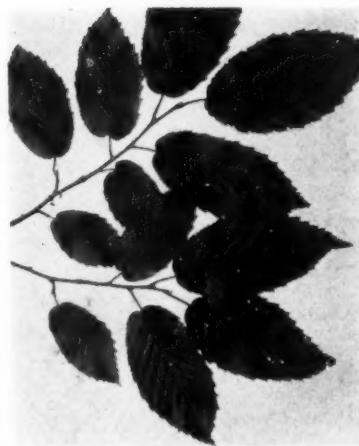
American Hornbeam is a small, bushy tree with long branches that form a wide-spreading or round-topped crown. The short trunk and larger branches are furrowed and ridged, often irregularly. Many of the branches have a zigzag form, most noticeable in the winter



and more or less hairy, especially the staminate flower buds. Lateral buds take the place of terminal buds which are absent. The twigs are slender, dark red and shining, smooth or often somewhat hairy.

The tough, close-grained wood is very hard and strong. When thoroughly air-dry a cubic foot weighs 49 pounds. The heartwood is light brown and the thick sapwood pale white. Because the bole of the tree is so short, and often crooked, it is rarely converted into sawed products.

Seed is produced abundantly almost every year and is easily distributed by the wind. The tree also reproduces by sprouts from the stump. It is very resistant to wind, insects and fungi.



The leaves are thin and firm with long, pointed tips and doubly saw-toothed edges



Somewhat similar to that of beech, the blue-gray bark is thin, tight and smooth



The fruit is a small nut borne at the base of a leaf-like bract



The staminate flowers, borne in catkins, hang from short branches



The eastern half of the country comprises the Hornbeam's range

CONSERVATION IN CONGRESS

THE appropriations bill for the Department of the Interior which suffered somewhat in the House, was reported in the Senate on June 8 with increases of almost \$149,000,000 over the House bill. The Senate figure is \$125,000,000 more than the Department had during the 1945-46 fiscal year.

In the Senate bill, the Grazing Service was increased from \$212,500, as passed by the House, to \$729,000. The Bureau of Reclamation received a 150 percent increase over the House figure. The National Park Service received \$15,163,295 more, and its total for roads and trails was raised to \$7,400,000. Increases for the Fish and Wildlife Service bring the total for that agency up to \$11,175,875, exclusive of Duck Stamp revenues which are estimated at about \$1,400,000; thus, the Fish and Wildlife Service may have more money at its disposal next fiscal year than ever before in its history.

It is very likely that the Senate will pass the bill as reported by its Appropriations Committee. The bill will then go to conference where doubtless some early compromises will be effected.

Hearings on the Columbia Valley Authority bill (S. 1716) set for the latter part of June have been indefinitely postponed at the request of Senator Mitchell of Washington, the author of the bill.

Among the many bills designed to release federal grazing lands to private ownership is S. 2257, introduced by Senator O'Mahoney of Wyoming. This is a companion bill to H.R. 6017, introduced in April by Representative Barrett of Wyoming. Both bills would transfer to the state of Wyoming for the use and benefit of the University of Wyoming 3,043,555 acres of the surveyed non-mineral, unappropriated and unreserved public lands of the United States, now under the Taylor Grazing Act.

Two bills, one in each house, S. 2282 and H.R. 6630 are designed to help reduce commercial activities in the Quetico-Superior Wilderness in Minnesota. They would authorize the exchange of state, county or private lands within the roadless area for federal lands outside. This is one of a series of measures in a program backed by the U. S. Forest Service, the Minnesota Department of Conservation and the county boards of Cook, Lake, and St. Louis counties.

with the support of Minnesota Arrowhead Association, the Izaak Walton League and other organizations. Already a number of resorts are operating and summer cabins have been built on private sites within the roadless area which promise to disturb the wilderness character of the region.

In the June issue we drew attention to two bills, H.R. 6201 and H.R. 6221, as stemming from labor's interest in sustained forest management, particularly the interest of the CIO in this regard. The bills, to es-

tablish the Franklin Delano Roosevelt Memorial Redwood Forest and "to further the conservation and proper use of publicly and privately owned forest lands," introduced by Representatives Douglas of California, and Hook of Michigan, respectively, are far reaching conservation measures. Further study into the background of the bills indicates that the Douglas bill is endorsed by the Union for Democratic Action and the Farmers Union, and while CIO is interested in both bills from the standpoint of their relationship to labor and employment, it has not yet officially sponsored or endorsed either measure.

CONSERVATION CALENDAR

Important Bills in Congress With Action to June 8, 1946

Appropriations

H.R. 5605—TARVER—Making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1947. Passed House, March 11. Passed Senate, June 1 (with amendments). In conference.

H.R. 6335—JOHNSON—Making appropriations for the Department of the Interior for the fiscal year ending June 30, 1947. Passed House, May 16. Reported with amendments in Senate, June 8.

National Forests

S. 913—HAYDEN—To protect scenic values along and tributary to the Catalina Highway within the Coronado National Forest. Passed Senate, February 21. Passed House, June 3.

S. 2282—SHIPSTEAD—To safeguard and consolidate certain areas of exceptional public interest within the Superior National Forest (Quetico-Superior country). Referred to the Committee on Public Lands and Surveys, May 29. Companion bill, H.R. 6630—PITTINGER—referred to House Committee on Agriculture, May 31.

Public Domain

S. 1672—O'MAHONEY—To authorize transfer to the Department of the Interior of surplus lands and property of federal agencies on reclamation projects. Reported with amendments, June 4. Report No. 1412.

S. 2257—O'MAHONEY—Granting to the state of Wyoming certain public lands for the use and benefit of the University of Wyoming. Referred to the Committee on Public Lands and Surveys, May 27.

S. 2126—HATCH—To provide for the disposal of materials or resources on the public lands of the United States which are under the exclusive jurisdiction of the Secretary of the Interior. Reported with amendments May 31. Report No. 1402.

National Monuments and Parks

H.R. 4486—SIKES—To abolish the Santa Rosa National Monument. Passed House, June 3. Referred to the Senate Committee on Public Lands and Surveys, June 4.

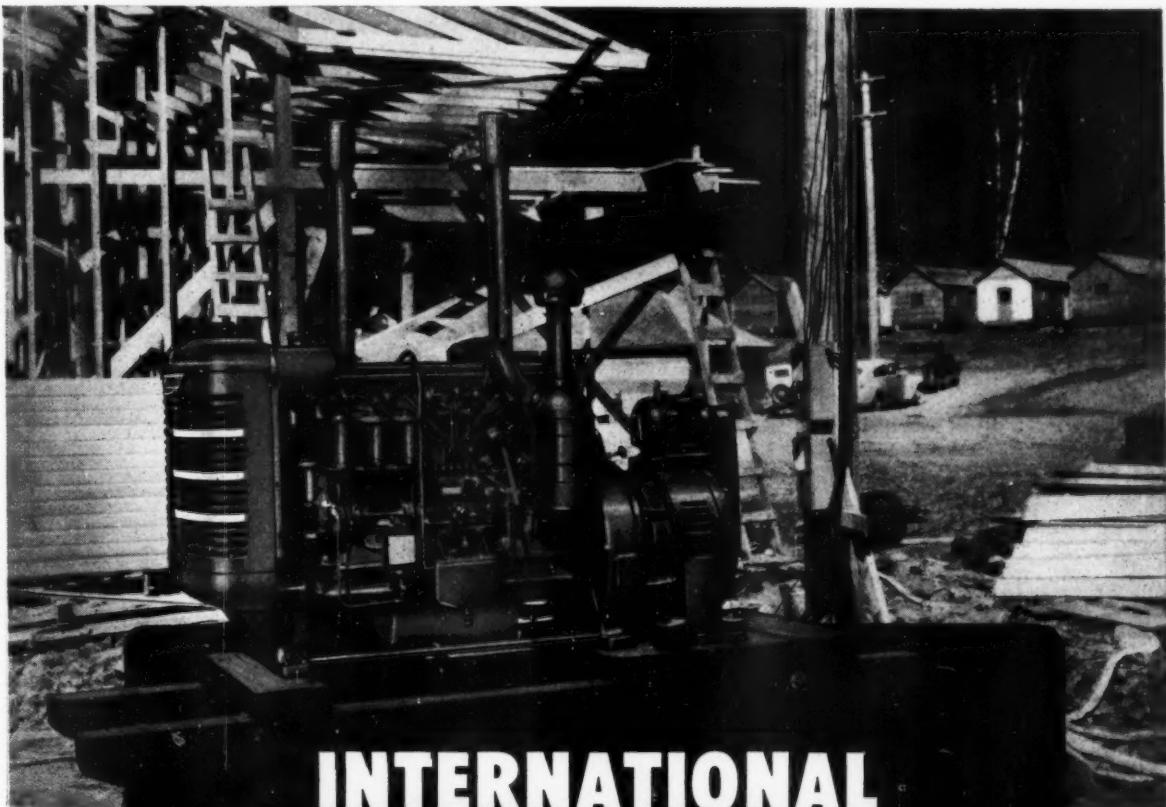
S. 1273—HATCH—To provide for the acquisition by exchange of non-federal property within the Glacier National Park. Passed Senate, February 21. Reported by House Committee on Public Lands, May 30. Report No. 2191.

Water and Stream Control

H.R. 6024—MANSFIELD—Relating to the prevention and control of water pollution. Reported by Committee on Rivers and Harbors, April 13. Report No. 1929. H.R. 632, providing for consideration of this bill, reported without amendments, May 21. Report No. 2101.

H.R. 6407—MANSFIELD—Authorizing the construction, repair, and preservation of certain public works on rivers and harbors. Passed House, June 6. A companion omnibus rivers and harbors bill, S. 2276—HILL—was referred to the Senate Committee on Commerce, May 31.

H.R. 6597—WHITTINGTON—Authorizing the construction of certain public works on rivers and harbors for flood control. Reported by Committee on Flood Control, May 29. Report 2165.



INTERNATIONAL *Power for the Whole Camp*

● Lights, crane hoists, refrigerators, air compressors, pumps and similar equipment at this logging camp near Molalla, Oregon, are powered by a 50-kw alternator driven by an International UD-18 Diesel Engine.

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INTERNATIONAL

California — The Unusual in Forests and Forestry

(From page 321)

Other land classes include cropland on farms, 11,899,000 acres; pasture and range, 15,366,000 acres; desert, barren, urban, industrial, etc., 27,574,000 acres. These, with the forest acreage (45,515,000 acres) already described, account for the total state area of 100,354,000 acres, as determined by 1940 U. S. Census.

The vast forest area of many uses is, for the most part, subject to extreme fire danger for varying periods of the year. This again calls for superlatives. California spends more on forest fire protection than any other state. Its years of experience in this field have led to the development of one of the best organized and most extensive state forest fire organizations. This agency is decentralized into six districts, each having distinctive problems of climate and forest cover.

A unique feature of the California forest fire organization is the cooperation which exists between the state organization and many county governments. Some counties in southern California have nearly exclusive control of fire protection. Unusual, too, in county and state set-ups, is the responsibility the California forest fire organization takes for all rural fire protection. In many counties, fires in structures are fought by the same organizations as fight brush and forest fires. This feature of the state's forest fire machine is worthy of attention from other states.

Some conflicts have arisen over protection of brush and forest areas where grazing interests desire to destroy brush cover with fire, and considerable time may elapse before these conflicts are all resolved. The function of brush cover in water conservation is not yet fully settled. In many areas, the brush consumes almost the entire rainfall. Careful investigation will be needed in each locality before correct methods of brushland management can be developed.

However, a beginning has been made. Early in 1946, the State Board of Forestry met with representatives of the grazing interests for frank discussion. Out of this came a significant basic declaration by the grazers that the use of fire upon forest areas is appropriate only as an instrument of land management.

This approach to the solution of knotty problems through patient, yet persistent, conference is characteristic of the revitalized state forestry board. This old established agency, long overshadowed by other divisions of the California Conservation Department, has been, since 1944, the spearhead of a new expansion of state forestry. It has been powerfully aided by a joint committee of the legislature, itself a significant manifestation of awakened interest among the lawmakers. One of the first actions taken was to join with the U. S. Forest Service and The American Forestry Association in a systematic appraisal of forest resources.

The 1945 session of the state legislature saw enactment of a forest regulation law, the fruit of numerous forestry board conferences with timber owners. The law provides for improving forest practices through industry cooperation with the state forest service. It is the industry's prescription for assuring satisfactory forest management, and the forest owners are on record as being determined to make it effective. Four local districts, based on natural forest types, have been established, and the state forest service has engaged additional technical personnel to handle advisory and inspection work.

No less significant is the action of the legislature in carrying out the State Board of Forestry's recommendation that the state should acquire demonstration forests and manage them for commercial timber production. Two million dollars was appropriated for this purpose in 1946.

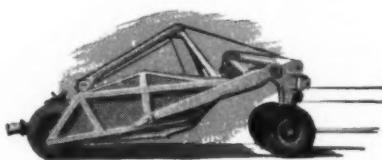
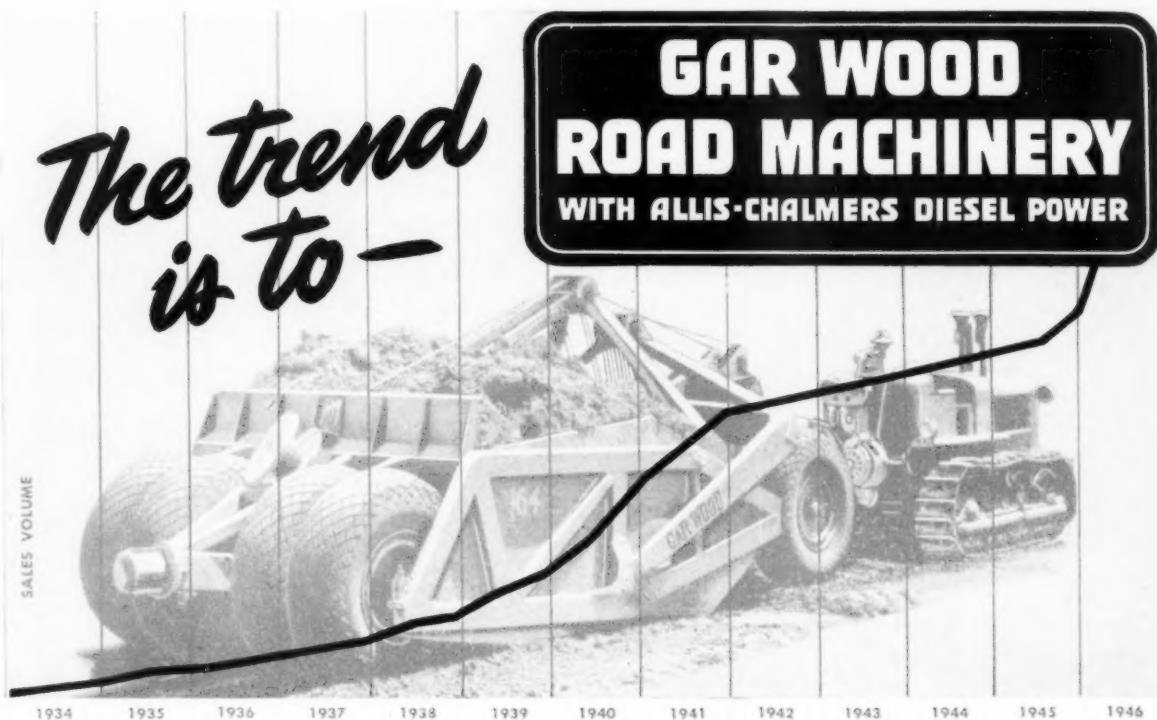
In describing the existing management of California's forests, one should either abandon superlatives, or use them antithetically. So far, it has been superlatively disappointing. With a great mass market for forest products, forest industries have devoted themselves to liquidation of standing timber and production of lumber surpluses. Severe competition from outside the state has helped prevent adequate financial returns to forest management, as distinct from manufacturing and distribution. It is difficult to avoid an impression of reckless dissipation of sales income to non-essentials in place of conservative return of a reasonable proportion of income to forest care. Too often this has resulted in complete liquidation of forest properties which might have supported dependent industries permanently. There are, however, a few forest properties in the pine areas that can be rated rather highly as sustained-yield operations. Some redwood forest properties have the makings of great permanent enterprises.

Publicly owned forests are popularly supposed to be managed intensively for sustained yield. Unfortunately, federally managed areas (chiefly national forests) show little evidence of intensive management here. Many extensive areas, right along highways, are filled with dead, dying and diseased trees. There is evidence for the belief that pursuit of high stumpage prices has had more weight in federal forest management than intensive use of the forest resource.

Until now, the State of California has not gone in for forest ownership to any great extent. Partly through appropriated funds and partly through donations, it has acquired a considerable area of parks, which is entirely withdrawn from commercial use. Only a few small areas have been acquired, in one way or another, for commercial forest management. Now that an expansion of state forests is in prospect, a permanent policy in management of these holdings should be established. If they are to become examples of intensive management, silvicultural practices must be of a high order, and careful records of expenses and income from each forest unit should be kept, in order to show the financial results of management. Few problems are more important than that of converting any areas under management from stagnating forests of poor net growth to areas bearing a vigorous growing-stock of the highest possible productivity.

Although there are large supplies of mature and over-mature timber, it is wholly undesirable to resume the production of surpluses that characterized the forest industries before the war. A more appropriate aim in management here, as elsewhere, is closer utilization integrated with good silvicultural practices. For a few years, it will be difficult to stimulate production enough to catch up on arrears in residential and other necessary construction. It is believed that the necessary timber supplies can most readily be obtained by decentralizing logging operations and stimulating production of logs from over-ripe elements of the timber stands. Under conditions that can be developed, the talents of every-day workers can be enlisted readily to work along these lines. It is probable that sawmills and other wood-working plants are available in sufficient numbers to do all necessary manufacturing. It is not necessary to resume liquidation of the forest to obtain all the timber needed. Not more than 20 years should be consumed in removing over-mature and surplus elements of all commercial stands. Until this is done, net growth will remain well below the full possibilities.

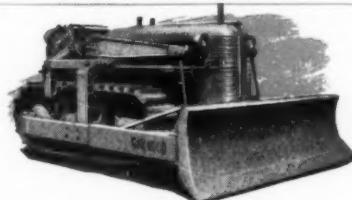
The economic situation of California's forests and forests
(Turn to page 342)



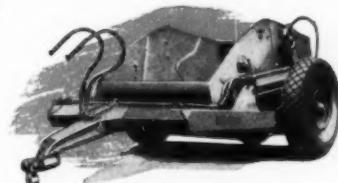
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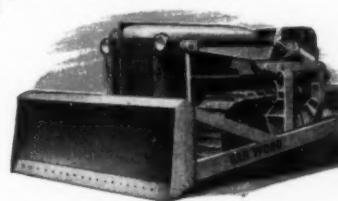
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Stock Farm in the Woods

(From page 309)

nual payments over an eight-year period. Lessees shared half the cost of spring and well development and agreed to keep in repair all company built fences and to build all corrals.

Leases also stipulated that livestock was to be grazed according to prescribed allotments and management guides of the range conservation program, as worked out by SCS men. The detailed grazing plan, copies of which were furnished the company and permittees, included soils and range type maps, with grazing units blocked out by seasons and carrying capacities. A five-year rotational grazing plan was outlined, with indicated salting stations, watering sites and other physical improvements. Grazing practices were itemized, with a statement of the plan's objective and a generalized description of the range area.

The program called for a stock reduction of about 2,000 sheep and 100 cattle and a restricted grazing season of four and a half to five months. Spring turnouts were to be controlled by vegetative readiness, ordinarily in late May or early June instead of the previous March. Perennial forage grasses were to have six to eight inches of new growth and the major browse species were to be in full leaf and beginning new twig growth before stock could be turned out.

In 1939, a demonstrational reforestation plot was established on a double burn area without seed trees. Logging grades were converted to fire truck trails by removing ties and doing rough grading, resulting in a network of valuable access roads. The physical range improvements were well completed by 1940, when the Underwood Soil Conservation District was organized by ranchers to carry on conservation work started in the county.

Stockmen have been sold on the grazing program. Many have commented on its good features and benefits. One cattleman stated that a developed spring on his range allotment would be worth \$1,000 to him on his home ranch. Another cattleman believes his stock grosses an extra 100 pounds on the fenced and managed range. Both sheep and cattlemen are watching the range recovery of the managed land and are beginning to see better grasses and more of them show up.

The J. Neils Company, too, is pleased with future possibilities in developing the grazing program.

Company officials believe that wartime shortages of labor and materials have prevented full enforcement of the grazing plan's provisions. Fencing maintenance, for instance, admittedly has been difficult and in a few instances delayed repairs have allowed trespass stock to overgraze localized areas. Modifications in the grazing program to integrate more completely with the company's major timber growing business may be needed, but the full extent of these will have to be determined when range men and foresters can appraise the effectiveness of the grazing program under complete maintenance conditions.

Current field observations indicate some conclusions for subsequent forage and timber management. Some type of range plan is needed to balance the forestry program, and regulation of livestock is vital to timber growing. Controlled grazing will not injure the forest resource and has advantages, such as reducing flash fuels of dried grass and herbs which feed ground fires, preparing a better seed bed for natural reproduction and developing stock trails which may be useful in corralling ground fires. Controlled grazing should allow adequate natural restocking on both clear-cut and selectively cut areas and therefore is compatible with timber management.

Ponderosa pine plantations on denuded areas will require from one to three years of grazing exclusion to give the seedlings the start they need. This is substantiated by the 1939 reforestation plot, which received complete grazing protection. Today the trees in this area are eight to ten feet high, with one and two foot leaders, and a lush carpet of vigorous grasses blankets the ground. Outside this fence-protected area the ground is scoured and trampled and the few scattered seedlings have been browsed to the ground. This convincingly proves that the poor restocking on many portions of the clear-cut plateau block has been caused largely by overgrazing and poor handling of stock and that controlled grazing will permit seed trees to reforest much of the land.

The grazing program as yet has not been carried out as intensively on the Glenwood block, where selective cutting is the logging practice. It is conceded that the best range occurs in this area. Here the company confines its slash disposal to piling and

burning along fire roads and fire-breaks and allowing other slash to remain on the ground. Intensive detection, patrol and firebreak and fire road development take the place of broadcast burning of slash. Normally it requires about two years for logging evidence to disappear and forage improvements to show up. Although fencing has been recommended on this area and would be desirable for complete range control, it may not be necessary on the Glenwood block because present natural restocking is satisfactory.

Financially, the range revenues received may not quite meet the expense of administration, fire protection and taxes, but the returns are a decided help and have enabled J. Neils to make many needed improvements. The income will make more attractive the holding over of the plateau block for a second cut, and the cash cost of range improvements can be amortized in 10 years by stepped-up carrying capacities and greater grazing revenue. At the same time a permanent range resource will be established, to help defray continually the costs of holding timber lands for future harvests. In technical recognition of its sound range management program, the J. Neils Company has received Agricultural Adjustment Administration conservation benefits for such approved practices as deferred grazing, tree planting, range reseeding and protection.

J. Neils has been sincerely carrying out the range program, consistent with wartime limitations. Reforestation has been extended annually to additional depleted areas and women tree planters have been wielding the mattocks. In 1941, a lightning fire destroyed part of one plantation and the company established a fenced grass seeding to minimize soil losses over the winter and to provide an interim grazing return. Drift fences generally are in good repair but stockmen have not been able to ride range as frequently as desirable to check on trespass and maintenance requirements. But in general, the managed range is increasing its grass density and palatability and successful natural reforestation is favored by controlled grazing. The J. Neils Company believes that when restrictions of the times are eased it can apply the lessons learned in extending the range program to the remainder of its 55,000-acre tree and stock farm in the Klickitat watershed.

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7-46

YOU CAN LOVE A TREE

By THOMAS R. SHIPP

In a terrific storm, the towering old locust tree, which for generations had brought beauty and shade to our Washington, D. C., home, tottered to the ground. It died as magnificently as it had lived.

Tall, stately, dignified, it was a tree among trees. In the early summers its ivory white blossoms beautified and perfumed the entire neighborhood and throughout the hot season it gave shade to the grateful grass and flowers underneath its boughs.

Beyond the memory of the oldest living men round about, it had nodded and waved its branches to the breezes and withstood the fiercest storms. It always seemed to revel in the winds as though it were wrestling with them, and enjoying it. In late years, however, when high winds blew, I could hear it groan and sigh as though weary and tired. It had lost a limb or two but still it was magnificent.

It made a kindly haven for all sorts of sweet-voiced feathered friends. A little keen-eyed squirrel had a cozy home in one of its crevices. The wood thrush came and sat among its leaves and trilled her mellow notes and the robin, perched on its very topmost twigs, voiced her rain song. The cardinal and the catbird seemed each to have its favorite perch on which to sit and sing. Even in the still of night, the mockingbird sat high in its branches and went through its varied repertoire of imitations.

Now, the old tree is gone. A storm one evening was fiercer than usual and the old pioneer strained and groaned as if in pain, yet did not give up until suddenly, from the threatening clouds, like a giant pistol shot, came a blinding bolt. For a fraction of a second a bluish flame played around as the old locust received its mortal wound. It took defeat bravely, bending lower and lower until it sank gradually, grandly to the earth. Even in death the old tree, always so kindly in life, was careful, it seemed, not to injure any of the surrounding young trees which had been its friends and companions. There it lay, stretched on the earth from where it came and to which it had given so much. The neighbors, to whom it had always been friendly, came and spoke softly. It was as though a grand old man had passed on.

As we looked more closely, we discovered the friendly hedge had caught and broken its fall, though by that gracious act had itself suffered badly. Birds came and sat about. Some of them sang but their songs seemed to carry a mournful note.

It was likely, the neighbors thought, the old tree had taken the stroke that otherwise might have destroyed our home. Who knows? Anyhow, the old pioneer has gone. I have lost a fine old friend.

Do you know you can love a tree?

Fish and Wildlife Service Reorganized

Secretary of the Interior J. A. Krug has announced a major reorganization of the Fish and Wildlife Service designed to bring about a more efficient functioning of this agency and to improve its services to the public.

The Service was created in 1940 by President Roosevelt's reorganization plan, which consolidated the former Bureau of Biological Survey and the Bureau of Fisheries.

The functions of the reorganized agency will be concentrated in four branches, instead of being scattered among twelve. These will be concerned with administration, research, commercial fisheries, and management of fish and game resources.

One of the most far reaching effects of the reorganization will be to

give increased importance to activities related to the commercial fishery industries. This branch will include the former divisions of Commercial Fisheries and Alaska Fisheries and will rank as one of the four major subdivisions.

All scientific studies of fish, birds, and mammals will be consolidated under a single head, who will administer the formerly independent divisions relating to fishery biology and wildlife research.

Under management will be included such diversified functions as federal aid in wildlife restoration, control of predatory animals and rodents, administration of wildlife refuges, game management, game fish management and hatchery operation, and acquisition of lands.

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LIVING BY THE LAND, by John C. Gifford. Published by Glade House, Inc., Coral Gables, Florida. 139 pages, illustrated. Price \$2.50.

Dr. Gifford is a recognized authority on forestry and conservation and one of the pioneers in the field of tropical forestry. Now professor of tropical forestry and conservation at the University of Miami, Dr. Gifford has written, in *Living by the Land*, a book which will appeal to the thousands of people interested in the one-man farm and forest in the southern United States and the Caribbean region.

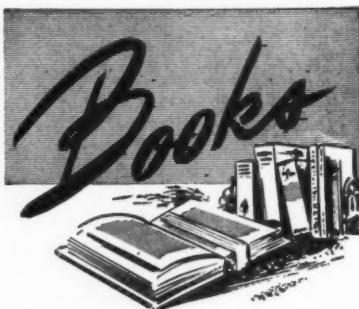
THE PACIFIC CREST TRAILWAY, compiled by Clinton C. Clarke. Published by The Pacific Crest Trail System Conference, Pasadena, California. 126 pages. Ills. Price \$2.25. This is a guide to the Pacific Coast Trailway, a true wilderness pathway from Canada to Mexico. In its entire length of 2,156 miles, one passes through only 65 miles of settled areas, 10 miles on paved highways, 23 miles through recreation areas, and 109 miles on the shoulders of wilderness roads. This guide describes the trailway, its geography and topography, gives itineraries for trips, catalogues the natural history along the trail, and provides lists of equipment and supplies needed for various types of trips. Loose maps and illustrations, in pockets on the inside covers, are provided for the convenience of hikers.

MY GARDEN DAY-BY-DAY for 1946, published by The Tool Shed, 116 East 66th Street, New York 21, New York. Price \$1.00 postpaid.

A bit of timely information or advice for each day in the year—what to do in your garden, delightfully presented and dressed like a calendar.

GUIDE TO SOUTHERN TREES, by Ellwood S. Harrar and J. George Harrar. Published by Whittlesey House, McGraw-Hill Book Company, Inc., New York. 712 pages. Illustrated. Price \$4.50.

More than 350 arborescent species native to the southern states are described in simple language and with botanical accuracy. In the initial portion of the book, the reader is introduced to tree nomenclature and classification in a manner easy for the amateur to understand. The section on broadleaved trees and conifers, illustrated with line drawings of the more important species, is an excellent guide for nature leaders, teachers and others interested in tree identification.



THE WILD HORSE OF THE WEST, by Walker D. Wyman. Published by The Caxton Printers, Ltd., Caldwell, Idaho. 348 pages. Ills. Price \$3.50.

Not the least value of Dr. Wyman's book is to dispel many illusions concerning the wild horse built by western fiction and Hollywood. He has replaced legend with an accurate and brilliant study of its origin, its importance in shaping the history of the West, and its virtual disappearance. Next to the buffalo, no wild animal was so typical of the frontier, and full justice is done to a thrilling story.

ESTABLISHMENT, DEVELOPMENT, AND MANAGEMENT OF CONIFER PLANTATIONS IN THE ELI WHITNEY FOREST, NEW HAVEN, CONNECTICUT, by R. C. Hawley and H. J. Lutz. Yale University, School of Forestry, New Haven, Conn. 110 pages. Ills. Price \$2.00.

Tree planting attracts as devotees landholders from millionaires to suburbanite cottage owners. Unfortunately, however, far too many have been content to watch their trees grow and expect posterity to honor them, and their heirs to reap financial or other rewards. They have not known that a forest plantation like a victory garden needs definite care if it is going to produce worthwhile products.

The proprietors of the Eli Whitney Forest, which belongs to the New Haven Water Company, began planting operations in 1901 and have kept it up ever since. Fortunately, the company realized the need of expert advice in both planting and care and engaged the senior author of this book to do the job.

This work stems from forty years' experience in planting, thinning, pruning and pest control work on various species and mixtures of species. Being among the oldest plantations under systematic management, they give invaluable data on growth. The authors specifically limit their field to southern Connecticut, but the principles they set forth apply over a much wider range.

The publications listed below must be ordered direct from the addressees as given and not through the Association.

Three Introduced Lovegrasses for Soil Conservation, by Franklin J. Crider. Circ. No. 730, Soil Cons. Serv., U. S. D. A., Supt. of Docs., Wash. 25, D. C. Price 20 cents.

The Protection of Migratory Birds—a consolidation of the Migratory Birds Convention Act and Federal Regulations. Dept. of Mines and Resources, Ottawa, Can.

Little Leaf Disease of Pine, by George H. Hepting, Thomas S. Buchanan and L.W.R. Jackson. Circ. No. 716, U. S. Dept. Agr. Supt. of Docs., Wash. 25, D. C. Price 5 cents.

Poems, Prose and Songs of Trees and Woodland for South Carolina. South Carolina State Commission of Forestry, Columbus, S. C.

The Vermont Deer Herd, by Leonard E. Foote. State Bull., Pittman-Robertson Series, No. 13. Vermont Fish and Game Service, Montpelier, Vt.

The Application of Meteorology to Forest Fire Protection, by J. G. Wright and H. W. Beall. Tech. Communication No. 4. Central Sales Branch, Imperial Agricultural Bureaux, Agricultural Research Building, Penglais, Aberystwyth, Great Britain. Price 50 cents.

Conserving Soil and Moisture in Orchards and Vineyards, by John T. Bregger and Grover F. Brown. Farmers' Bull. No. 1970, Soil Cons. Serv., U.S.D.A. Supt. of Docs., Wash. 25, D. C. Price 10 cents.

Capturing Foxes, by F. E. Garlough. Circ. No. 8, Fish and Wildlife Serv., U. S. Dept. of Interior. Supt. of Docs., Wash. 25, D. C. Price 5 cents.

The Forest and Forest Industries of Norrland, by Gunnar Lowegren, Supplement to Svenska Handelsbanken's Index, published by Ivar Haeggstroms Boktryckeri in Stockholm, 1945.

Farm Buildings from Home-Grown Timber in the South, by W. K. Williams. Farmers Bull. No. 1975, U. S. Dept. of Agr. Supt. of Docs., Wash., D. C. Price 10 cents.

Fishery Resources of the United States. Fish and Wildlife Service—A Report transmitted by the Secretary of the Interior to the Senate. Supt. of Docs., Wash., D. C. Price 40 cents.

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New York Law Stimulates Forest Practices

THE Forest Practice Standards Law approved by the Governor of New York on March 1, approaches the stimulation of good forestry by means of technical assistance to cooperating landowners.

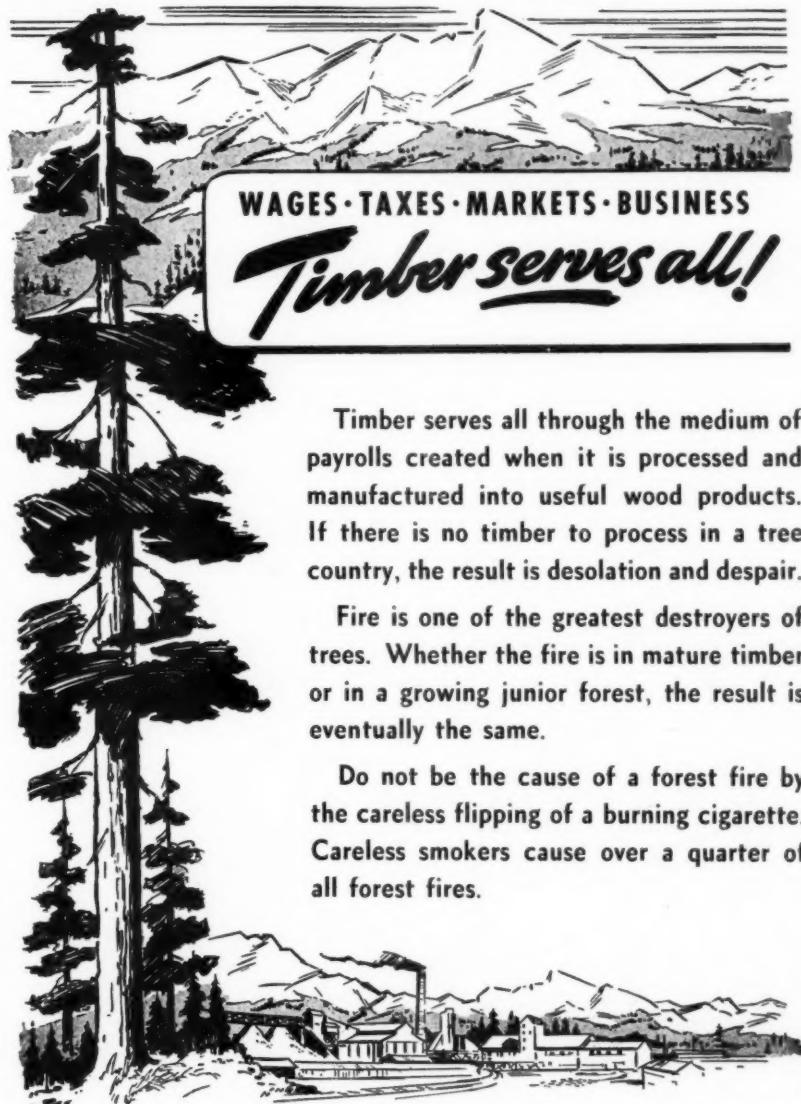
First step in the program is the establishment of not more than 20 forest districts and the employment of a technically trained district forester and assistant as needed for each. Within each district a forest practice board is appointed by the county board of supervisors to determine the forest practice standards necessary. These standards if approved by the state forest practice board and by the conservation commissioner, are then promoted among the forest landowners of the district. The board may approve also any working plans submitted by a landowner in lieu of compliance with the adopted standards if they are considered equivalent in effect.

Forest owners who agree to comply with the standards thus established or approved, are eligible for state-provided technical services including, but not limited to, the marking of timber, marketing assistance, reforestation and silvicultural operations in immature stands.

Membership of the district boards includes three members from each county within the district—one a member of the county board of supervisors, and two who are individual owners or representatives of corporate owners of forest or farm woodland. The chairman of each soil conservation district within a forest district is an ex-officio member of the committee, without vote. Each district board elects its own chairman, and the district forester may serve as secretary of the board.

The state board is made up of one representative from each district board and, as ex-officio members without vote, the dean of the State College of Forestry, the dean of the State College of Agriculture, and the chairman of the State Conference Board of Farm Organizations. The director of Lands and Forests of the Conservation Department may serve as secretary of the state board.

Electrification of timber operations is planned in the U. S. S. R. to speed up production, particularly in the cutting of trees and stripping them of branches.



Timber serves all through the medium of payrolls created when it is processed and manufactured into useful wood products. If there is no timber to process in a tree country, the result is desolation and despair.

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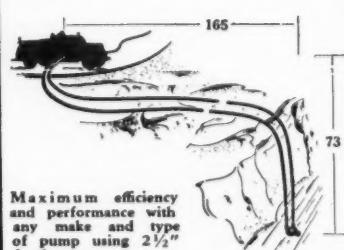
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French Forester Named to UNO Post

MARCEL LELOUP of France, has been appointed director of Forestry and Forest Products for the Food and Agriculture Organization of the United Nations.

Mr. Leloup comes to his new position with a broad background in forestry. Following World War I, in which he lost an arm, he studied at the Ecole Polytechnique and at the French forest school at Nancy. His early work was in Gabon, French Equatorial Africa, where he established a silvicultural system for tropical forestry. Later, after making a detailed survey of the forests of the Middle Congo, he was transferred to the Department of Waters and Forests in Paris.

In 1936, he became a special assistant in the French Cabinet, where his work raised him to membership in the Council of State, the supreme



Marcel Leloup

administration of France. Following the liberation of France, he was appointed director general of Waters and Forests and named Counsellor of State.

Mr. Leloup headed the French forestry delegation to the UNO conference in Quebec in October 1945, where he took a leading part in shaping the forestry organization. Recently he came to Washington to preside over a UNO forestry committee meeting and was named head of the international forestry organization.

This appointment marks the beginning of a permanent forestry staff in UNO. The division will assume the combined functions of two existing international organizations, the Comite International du Bois and the Centre International de Silviculture.

Cedar of Lebanon

(From page 311)

France grow more slowly than they do here.

This apparent slow growth in France might well raise the question if the cedar is not, after all, too slow growing to be a practical tree to propagate. The trees at Harvard apparently make about two-thirds the growth of white pine. Near relatives

of the cedar of Lebanon are found in the Atlas cedars of North Africa, and in the *deodara* cedars of India. It is possible that some hybridization might speed up the growth, but the rate of growth would undoubtedly vary greatly in different localities.

In France the tree has been planted primarily on account of its religious associations and is found mostly on the grounds of the religious orders. In England it is a landscape tree, and is planted on the estates of the aristocracy and along avenues. The best known trees are in the Kew Gardens. In this country it might well have all of these uses along with several others.

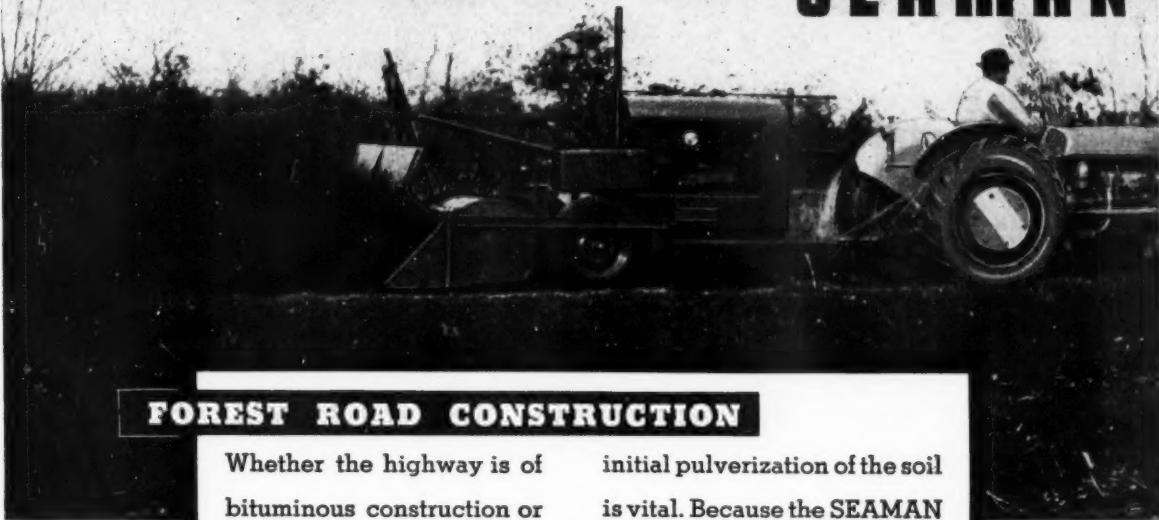
I have talked with a number of people in this country, and all wish to plant the tree. My pastor would like two for the church grounds. It would certainly be a wonderful addition to the grounds of our American churches, so far as they have any grounds, to have one of these beautiful trees growing there. It would be

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a very appropriate tree to plant in cemeteries; but its greatest immediate use would be in the parks and on private grounds.

The beautiful wood of the cedar was regarded as so essential that Solomon was willing to put 150 thousand men to work for three years harvesting it to panel his temple. The Temple of Diana of Ephesus, another famous temple of the ancient world, was also veneered in the same way.

The fame of the cedar in Bible times came from its beautiful wood and aromatic gum. I have spoken of its attractiveness as a

landscape tree, but it may prove well worth introducing as a forest tree—for its valuable wood alone. Why should we reforest everywhere with pine and little else? To be sure, the cedars probably will not grow as fast, but the difference may not be very great, and the cedar is a much more valuable wood. Why not undertake, after the necessary preliminary trials, some reforestation with the tree? In a comparatively short time we might be getting plywoods and veneers from these cedars to sheathe our churches and offices, and timber for chairs and other furniture.

Better Slogans

(From page 313)

tongue. New Jersey has used signs in English, Italian, Polish, Yiddish and Hungarian—all on the same poster. British Columbia once translated a government fire regulation into Icelandic, Ukrainian, Japanese, Chinese, Cree, Chippewa and Hindu—all on separate posters. Unless one is unusually well-versed in the psychology of the people involved, such notices are likely to be informative only because "slanguage" cannot be used. Such signs lose some of the slogan flavor.

Signs can often be directed at a single cause and then suitably placed to reach the possible offender. Campers who see the illustrated slogan "Be Sure It's Out—Dead Out" or perhaps "Leave Your Campfire Cold" cannot help but get the point as they start on their wilderness vacation. Such slogans, while bereft of appeal, are nevertheless inoffensive and impelling reminders of danger and the law.

Besides the indispensable value of timeliness in a slogan, brevity rates high on the priority list. When John Doe is going places or doing things he does not want, nor intend to read, an extract of Chapter X, Section 82 of the criminal code in 500 words of fine print, no matter what the consequences! Nor does he relish the implied threat. Instead of being completely read such notices invariably suffer the sad fate of mutilation.

A carefully planned slogan can be brief and still pack a wallop that leaves the reader intrigued and thinking. Take, for example, the excellent effort of the Forest Service in the Northern Rocky Mountain region, "Don't Be a Flipper," with an illustration of a cigarette butt poised for

a ride between thumb and index finger. This is one of a series of four large roadside signs telling a brief story, carefully spaced, unerringly located, attractively constructed, and easily seen from a car traveling 50 miles an hour. This type of sign and slogan, unfortunately all too rare, rebukes that instinct which prompts all people to do something they know they shouldn't—like throwing stones at a floating bottle on a bathing beach.

In these days when more people than ever travel by car, train and plane, slogans must be brief or they won't be read. And unless the slogan is inoffensive the score will be zero. Human nature being what it is, most people are inclined to be slightly irascible when reminded of the law. Thus, "Don't Take Chances—Use the Ash Tray" is preferable to "Use the Ash Tray" alone. The former urges the smoker to exercise carefulness and suggests an easy method; the latter is an outright command. There is quite a difference. Likewise, the person who reads "Put That Campfire Out," which smacks of the "or else" element, is much less likely to react favorably than where "Was Your Campfire Cold?" signs appear.

While small signs might suffice in a waiting room or a cross-country bus where the public is obliged to sit and read posters, it will take more than an ordinary fire prevention sign facing the highway to slow down the average vacationist—no matter what the size! If it is placed *facing* him, where he can't miss seeing it and reading it quickly, chances are his butt or pipe heel will find the ash

tray and another fire might be avoided.

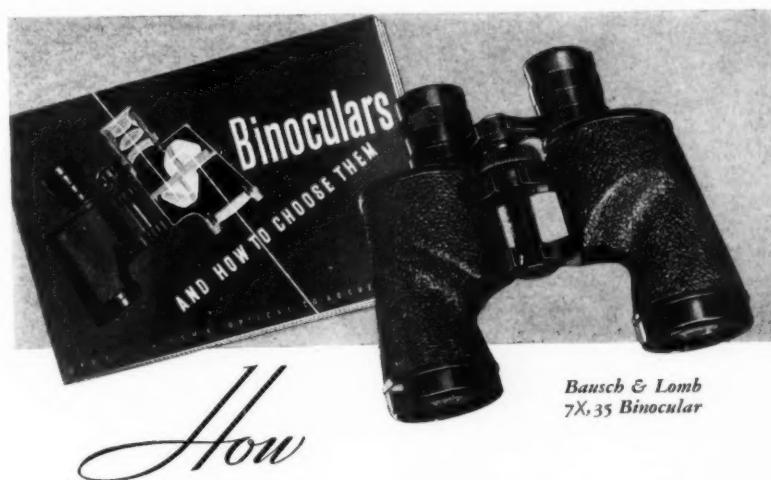
If signs and slogans are going to pay their way, they have to be, as with other kinds of advertising, in pace with the times. "Prevent Forest Fires" signs can be found the length and breadth of the continent. They appear on signboards, rocks, trees and barns in red paint, green paint, yellow paint and black paint. They request cooperation mildly in an expression which has become, through several decades, tantalizingly trite. Some variations prefix the expression with "Help"; others suffix them with the profound thought that "It Pays." Their effectiveness is equal to the response that might result from "Prevent Murder" appeals. Their sole attribute of brevity could be suitably substituted for something slightly more dynamic such as "Keep the Forests Out of the Red"—"Keep the Forests Out of Mourning"—"Keep 'em Growing." There is plenty of room for improvement here.

There is no denying the power of a good slogan and more than one presidential campaign has been won by a few well selected words. But they must be neat and carefully conceived, if they are to be effective. As we enter the atomic era, forest fire prevention experts will have to keep in stride with their industrial counterparts for the thankless task of reminding the public of the good they can do and the harm they can cause.

New avenues of approach for the slogan are waiting to be explored. The air transport companies, better than any agencies which exist, could easily point out to their passengers the brown scars of forest fires over their routes, or the red demon himself at work, especially in the West. Hunting licenses could remind the nimrod that "Forest Fires Kill Ten Deer for Every One You Kill." Drivers' licenses might suggest by a phrase to vacationing autoists "Help Grow the Forests Up—Don't Burn Them Down."

The fine example set by the South Carolina State Commission of Forestry and other agencies and organizations in distributing books of matches to remind smokers of the fire danger could be profitably followed. Elaboration of the theme of the Keep Oregon Green Association would have these books carrying a "Chaperone Me—I Mustn't Go Out Alone" message.

Slogans with a personality, in the right place, at the right time, can prompt the public to guard the country's greatest natural resource.



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California

(From page 328)

try could be summed up briefly by stating that the resources of the state have not received balanced consideration by leaders in agriculture, industry, labor and other fields of human endeavor. Great efforts have been devoted to the development of agriculture, through irrigation and in other ways, and to the development of industry often remotely related to the state's natural resources. In contrast to these efforts, there has been an astonishing neglect of the industrial possibilities from permanent forest development. Recreational aspects of forest use have received more attention.

Although all observers expect striking increases in population, it appears that most Californians have failed to note that, out of the state's 100 million acres of total land area, only 17 percent is occupied by commercial stands of timber, and that so much of this has been incorporated in parks and recreational areas, that less than 15 percent is available for commercial use. Of this, only a small portion is of superbly productive character. Much of the forest area is of distinctly low productivity. Thus, the eastside ponderosa pine forests do not, at present, produce more than 100 board feet an acre, annually, and,

at this rate, it may require three million acres of this pine type to meet the boxboard requirements of the 300,000-acre citrus fruit industry. Yet, this requirement constitutes only a small item of the vast quantity of lumber required in the state.

Growth in the commercial forests of the state has recently been calculated by the U. S. Forest Service at 1,160 billion board feet. This includes inoperable and some otherwise unavailable forest areas. The annual commodity drain from sawtimber trees is calculated at 2,615 million board feet, and non-commodity drain at 542 million board feet (fire 91, and insects 451 million board feet), or a total drain of 3,157 million board feet.

California is the largest user of lumber of all the states, and never, since statehood was conferred, has it produced its own requirements. Until now, it has been easily possible to make up the deficit from the Pacific Northwest. In the future, it is reasonable to expect that world-wide demands on the Northwest forests will make it far more difficult for California to supplement its own production from outside sources. A major effort is needed to "sell" California forests and forestry to Californians.

Nevada

(From page 323)

feet yearly since, owing to wartime mining activity and military construction.

Obviously, Nevada's forests cannot meet even its peacetime timber requirements. Federal foresters estimate an allowable cut, on a basis of sustained yield, of 3,400,000 board feet from the national forests. Private areas, under similar conservative management, might add twice as much more. What actually happens on the private lands is neither as good nor as bad as might be. Ranchers cut carelessly and with little thought for the maintenance of stands in good growing condition, yet most of the privately-owned commercial forest is not being operated at all.

The objectives of public land management in Nevada are chiefly the maintenance of water supplies and range forage. Fire protection thus is a serious concern, as is control of use of ranges. Toward such work the private owners and users of land, whatever its vegetative cover may be, are sympathetic and helpful. Whether

in the highly developed western corner, or upon wide expanses of brush or woodland range, the local people fear fire.

Recreation naturally is an important collateral use for which certain areas are especially adapted. Even though approximately three-fourths of the state's surface is included in federal grazing districts, there still remain vast areas upon which game can be fed. In the vicinity of Lake Tahoe recreation values exercise a strong control over use of the forests.

Strangely enough, although it has no state forestry department, Nevada, since 1929, has had a forest practices act prohibiting the sale of live or growing wood from any common, white, yellow, or sugar pine tree, or any fir, tamarack, spruce, or flat-leaved cedar less than one foot in diameter two feet from the ground. The object of this law is to protect natural water supplies by assuring new generations of trees. Violation entails fine (\$500) or imprisonment (six months), or both.

Big Bend

(From page 306)

little century plant; the longspur columbine, restricted to three springs in the park; a tiny relict colony of quaking aspens, maintaining an exceedingly lonely vigil on Emory Peak; and the handsome chinquapin oak, restricted to Pulliam Canyon.

Among birds no less than 240 kinds have been recorded in the park. These include a number of rare forms, among them the blue-throated hummingbird, dwarf red-shafted flicker, Mexican phainopepla, Colima warbler and hooded oriole. The animal life, too, is of interest. No less than 57 varieties of mammals are known to occur in the park. Assuredly one of the most interesting of these is the black bear. Then, too, the ring-tailed cat, the mountain lion, the beaver and the peccary or javelina occupy important places on the list.

The Davis Mountains' king snake is known only from the Davis and Chisos mountains of Texas and adjacent Mexico; of unusual interest also are characteristic species of ring-necked snake, copperhead; the green rattlesnake, a fence lizard and an American representative of a Mexican genus of frogs.

There are even some little fishes restricted to the Big Bend region, and some insects and spiders. We know these are important as links in the grand chain of cause and effect, feeders and food, shelterers and sheltered, pollinators and pests, which make up the great community of plants and animals as we know it.

Well do I remember my first visit to the basin in the Chisos Mountains. As we came over the pass and proceeded down the gentle slope into that interesting natural amphitheater, one of the famous flagtailed deer bounded off to one side, its conspicuous white tail flashing from one side to the other as it ran. Then another flagtail, and another — they were abundant!

It's a small deer, perhaps averaging 70 to 90 pounds in weight, but against the backdrop of Casa Grande, Pulliam Ridge and Emory Peak, appearing decidedly smaller. There is, in addition, the mule deer (or black-tail) of the lower parts of the park, seen at intervals from the foothills all the way to the Rio Grande. With the elimination of livestock, the deer, and especially the mule deer, will now have a chance to come into their own, to increase somewhat, and to become a little more gentle so the visitor may

see them with even greater certainty.

We are frequently asked about the relationship of the Virginia deer to the flagtail. As a matter of fact, the flagtail is the Virginia deer of the higher parts of the Chisos and the Sierra del Carmen mountains. A second variety of Virginia deer has been reported from intermediate elevations in the park. All of these deer of the higher parts of the mountains belong to the stock called the Carmen Mountains whitetail.

To those who like fine sweeping vistas, the scenes from the South Rim of the Chisos or its counterpart, the Sierra del Carmen escarpment in Mexico, are as fine, of their kind, as any in the continent. Perched atop a perpendicular cliff of up to 2,000 feet or more in vertical altitude, either in the United States or across in Old Mexico, one obtains an airplane view of the lower portions of the park, with the Rio Grande in the middle distance, and a whole series of desert mountain ranges as far as the eye can see (said to be 100 miles on a clear day).

Most national parks are restricted to mountain peaks and do not embrace the low country at the base of the heights. In this regard the Big Bend is unique, for it takes in not only the lowlands along the Rio Grande and all the intermediate elevations, but the woodland and forest of the higher altitudes, too. It affords a complete biological picture. There is plenty of opportunity for the seasonal ebb and flow of migratory species within the park and for the development of an unusual variety of plant and animal life under the influence of widely varying conditions of climate and soil. In this particular, probably no other in the entire series of American national parks is superior to the Big Bend of Texas.

Probably to one who is truly sensitive to his surroundings every day is different, wherever he may be. Certainly one seldom if ever sees the Big Bend twice the same, or fails to find something new and interesting on every trip into the region. But sometimes we get a big thrill — like the day we first visited Dagger Flat and saw the giant dagger in bloom.

The giant dagger, king of all the yucca tribe in the United States, grows regularly to a height of from 10 to 15 feet—or even higher. Its flower clusters are huge, a single one large enough to fill the end of a small room. By thousands it appears

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in Dagger Flat, east of Dagger Mountain, and between there and the Deadhorse or northerly portion of the Sierra del Carmen. In impressiveness and sheer national park quality it compares favorably with the giant saquaros of the Tucson region in southern Arizona, or the giant tree yucca of the Mohave Desert. Indeed, if there were no other reason to set aside the Big Bend as a national park the giant dagger would, to my mind, be sufficient justification. And the surprising thing about it is that Dagger Flat is so little known, even to official park visitors. To this day there is no automobile road into it. One has to fight his way in by faint wagon track which can be followed only with difficulty and sometimes, after a storm, not at all. Probably fewer than one in a thousand of the tourists who have visited the park have ever seen Dagger flat.

Thus the giant dagger, by virtue of its isolation, is one of the hidden resources of the park. Many other of the scientific and recreational resources of the region are of this same hidden character. Only a few of the thousands of plants can be found without searching. The mammals, insects and reptiles are characteristic out of sight, many of them nocturnal. The game species are always self-effacing and cautious, wanting to see you before you see them. Even the birds are not easy to see and follow. One is sure to be impressed with the barrenness and lifelessness of the area, until he begins to get somewhat better acquainted with it. But the resources are there, even if they are so largely hidden.

The Big Bend area, like arid and desert localities everywhere, is a

country of moods. It may be hot or cold, windy, or of deathlike stillness. The air may be filled with dust, or so crystal clear that the stars seem to be within easy reach. Floods may, and often do, tear out the roads, and drought may become so extreme that even the hardy desert plants succumb. The humidity is so low at times as to be of the lip-cracking variety, but thick fog has covered most of the park for days at a time. Like the moods of a sensitive artist, these unanticipated expressions of the temperament of nature add unusual interest to the Big Bend.

At first, "civilized" man seems to have gone into the Big Bend region with the intention of breaking nature to his will. He did not quite succeed in doing this, but he almost broke himself in the process.

Seemingly, if we study nature, learn how to live and work with her, to produce the crops she likes best, to care for her and her children and in turn to be cared for by her, we shall get along better.

Indeed, it looks like our very survival may depend on a sympathetic appreciation of nature and a willingness to get acquainted with her and work with her. If we can encourage and inspire this way of looking at our surroundings we will be relieved of many nameless and unnecessary fears, and we will make a substantial contribution to those ideals of beauty, goodness and truth which are so important to the future of civilization. To these ideals the national park idea is dedicated, and in the series the Big Bend National Park of Texas—unique, interesting and inspiring—is destined to occupy an important place.

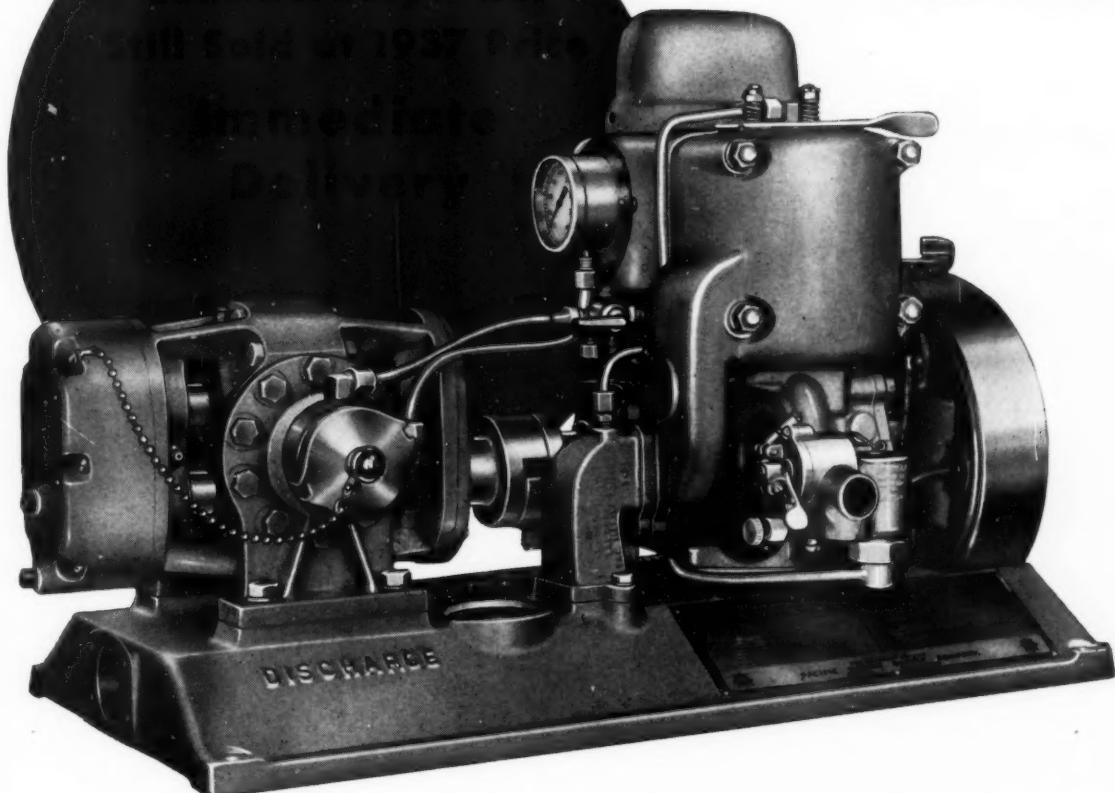
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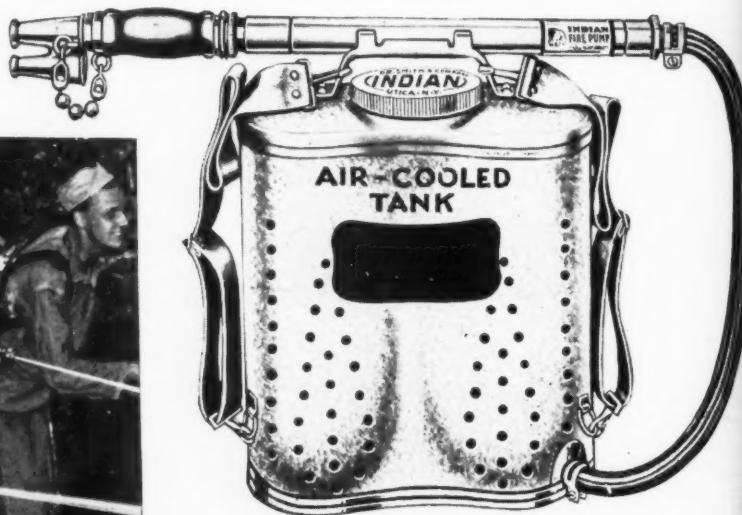
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